

ARCHAEOLOGIA:

OR

MISCELLANEOUS TRACTS

RELATING TO

ANTIQUITY.



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OR,
MISCELLANEOUS TRACTS
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&c.

I.—*On the Forum of the Roman Station at Cilurnum.* By the Rev. JOHN
COLLINGWOOD BRUCE, LL.D. F.S.A.

Read June 2, 1876.

THE station of *Cilurnum*, containing five acres and a quarter, is the largest but one on the line of Hadrian's Wall. It guarded the bridge which connects the traffic on the two sides of the North Tyne, and it commanded the woody defile along which that river flows from the north to the south. It is situated in a fertile district, which would at all times attract a numerous population. During the period of Roman domination the forum of *Cilurnum* would be the resort of many seeking justice at the hands of the prefect, and of others who brought their wares to supply the wants of the garrison and the suburban population.

There is little doubt that *Cilurnum* formed one of the forts which Agricola erected, about the year 80, to protect his rear, when he advanced northwards against the Caledonians. It was one of those fortresses which Tacitus, the biographer of Agricola, describes as having been so placed and so constructed that they were never taken by storm nor relinquished by treaty. Hadrian afterwards adopted it as one of his mural stations, the sixth *per lineam valli* of the *Notitia*, garrisoned by the *Ala secunda Asturum*.

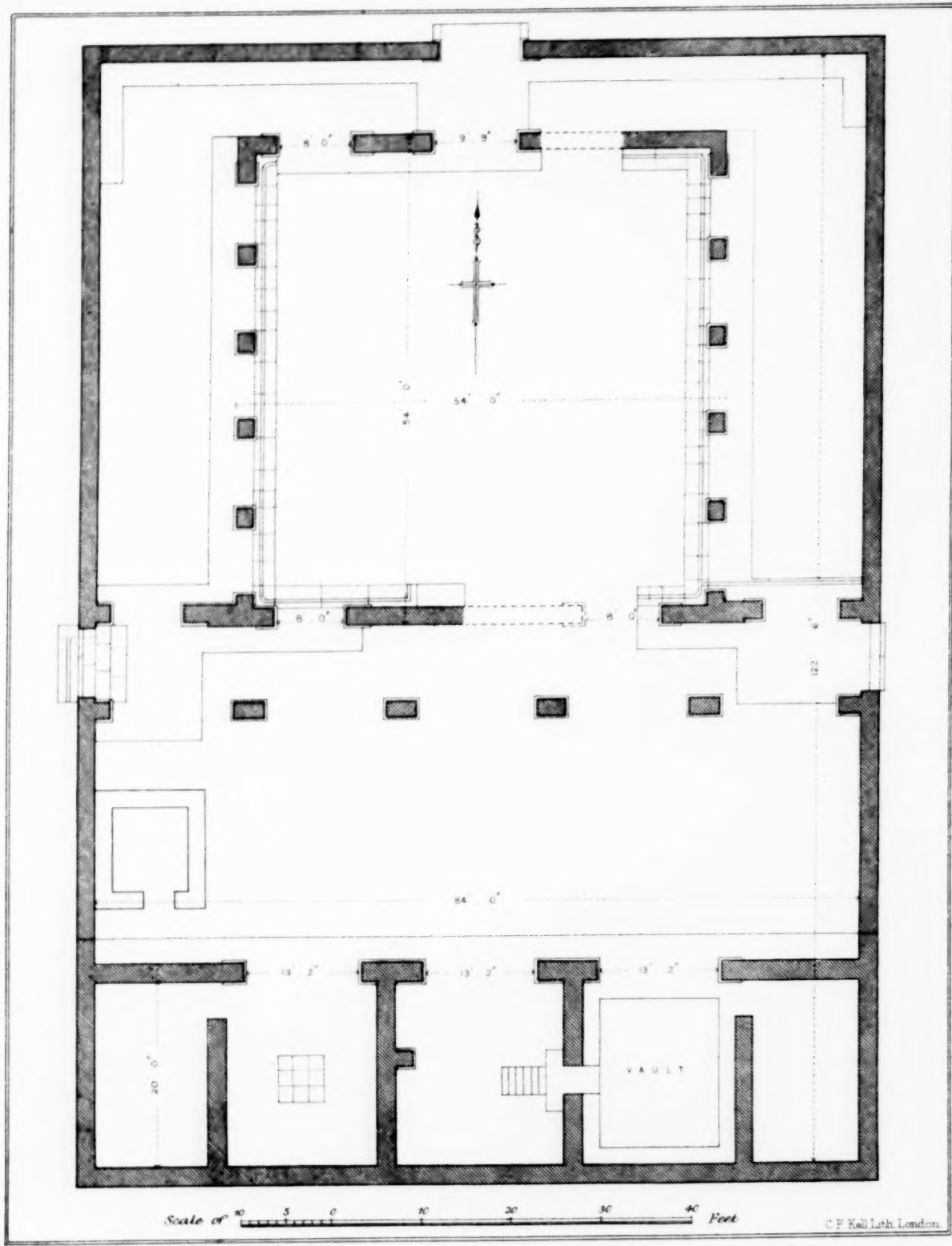
About the beginning of this century (1803) a vaulted chamber was accidentally discovered near the middle of the station. A tradition existed in the country, no doubt extending down from Roman times, that the force which

originally occupied the fort was a cavalry regiment, and that the stables were underground. The labourers, coming unexpectedly upon this vault, thought that the tradition was about to be verified, and that they had now found the entrance into the stables. They were, however, disappointed.

The masonry of this vault is of rude workmanship, indicating a later period of construction than that of Agricola, or Hadrian, or Severus. When discovered, the entrance into the vault was closed by a strong oaken door studded with iron, and on the floor of it were found a number of denarii, chiefly false, being made of brass plated with silver, for circulation amongst the Britons. These circumstances led to the supposition that the chamber had been the *Aerarium* of the station.

Since this discovery was made other parts of the station have been cleared, with most interesting results, but until recently no further exploration was made in the neighbourhood of the vault. It having been suggested to the proprietor of the station, John Clayton, Esq. F.S.A., that the vault had assumed an underground appearance more from the heaping up of *débris* about it than from original construction, he resolved to ascertain the fact, and find out its exact relationship with the contiguous buildings of the camp. In the early part of the year 1870 he proceeded to do so.

On clearing the ground on both sides of it, a range of apartments was found, having no entrance from the south, but having three entrances from the north, each of these entrances being precisely 13 ft. 2 in. wide. These apertures had evidently been arched over, as some springers and some of the *voussoirs* were found amongst the *débris*. In excavating the middle apartment an unusual number of coins was discovered, many of them in excellent preservation. Amongst the denarii were some of the Consular period, others of Vespasian, Nerva, Hadrian, Antoninus Pius, and Julia Domna, the second wife of Severus. Among the brass coins were very fine first brass coins of Trajan and Hadrian, and a particularly fine second brass of Faustina Junior, and coins of Commodus and Constantine. The unusual number of coins found in this chamber suggested the idea that it had been the treasury of the station. It will be observed that this use had been ascribed to the vault which had been discovered many years before. The entrance into this vault is from near the centre of the apartment we are now discussing. It would seem, therefore, that when, towards the close of the Roman occupation of Britain, the garrison became weakened in numbers they found it necessary to put themselves more on the defensive than before, and to take special



PLAN OF THE FORUM AT CILURNUM, OCT. 1875.

Published by the Society of Antiquaries of London, 1879

means for the protection of such treasure as they possessed. One of these apartments that we are now referring to has been provided with a stone hearth, which is still complete, though much acted on by fire. About a cartload of coals was found near it.

We must next inquire into the original use of this range of apartments. As already stated, the central one was probably the treasury. On each side of it are two public halls, and each of these halls has a more secluded chamber communicating with it. On viewing the scene before him, when first excavated, Mr. Clayton was struck with the resemblance which these apartments bore to the halls which he had seen at Pompeii at the southern end of the forum of that famous city. There, as here, are three halls, the central one being regarded by antiquaries as the treasury or bank, those on each side of it as *curie*, or courts for the administration of justice, for which purpose the lateral chambers would be of great advantage; they might be used as waiting-rooms, places for private consultation, or for the custody of prisoners awaiting trial.

Having identified, as he supposed, these halls with those on the south extremity of the forum at Pompeii, Mr. Clayton came to the conclusion that, by excavating the ground in front of them to the north, he ought to find some remains of the market-place of Cilurnum. Walls running north from the east and west sides of these apartments showed that they did not stand alone, but formed a part of some important structure. However, as the ground to the north was very much depressed, it was feared that the remains of the forum, if such it was, would be very scanty. An excavation was determined upon, and notwithstanding previous forebodings the most satisfactory results were obtained. The remains of the buildings were found standing higher than was expected, inasmuch as some of them rose nearly to the level of the present surface of the ground. I need not further attempt to describe the progress of discovery, but will at once proceed to give an account of the whole structure as it now appears. The plan with which I have been furnished by Mr. Clayton exhibits all the arrangements very accurately. (See Plate I.)

And first, with regard to the position of the forum. In the centre of the northern rampart of the station is a gateway, and in the centre of the southern rampart is another gateway. The forum lies about midway between these. There are two gateways in both the western and eastern ramparts, and these are connected by streets crossing from one side of the station to the other. Now the forum is placed immediately on the south of the road leading through

the station from the principal gateway in the eastern rampart to the principal gateway in the western rampart, and it occupies the whole of the space lying between the two streets connected with the lateral gateways.

Next as to the size and general arrangements of the forum. A stone wall 2 ft. 6 in. thick incloses the whole of the structures. The length of the forum from north to south is 122 ft. 6 in. and the breadth 84 ft. inside measurement.

There are three entrances to the forum. One of these (the principal entrance) is in the centre of the northern boundary wall of the forum, being for horses and carriages as well as foot-passengers, and is 9 ft. 9 in. in width. Another, in the centre of the eastern boundary wall of the forum, has also been for the passage of horses and carriages as well as foot-passengers, and is 8 ft. in width; ruts of Roman wheels are visible in the sill of this gateway, and show that the space between the wheels of Roman carriages used here was 4 ft. only, whilst the space between the wheels of modern carts is 6 ft. The third gate is in the west wall of the forum, precisely opposite to that in the east wall; this entrance is by stone steps descending from a higher level, so that it has been used by foot-passengers only. It also is 8 feet wide.

From the description given of the position of the forum it will be seen that the main streets of the station lead directly to it: in addition to these there are other streets on its east and west sides of the same width as the others, namely, 18 feet. The forum therefore formed an isolated block, with every facility for approach.

The buildings forming the south end of the forum (the treasury and the two *curiæ*) have already been described. In front of these buildings is an open space or court-yard, about 27 feet in width, and extending in length 84 feet (being the whole breadth of the forum), which was probably used for the assembly and passage of persons resorting to the *Ærarium*, the courts of justice, and the market. On the west side of this open space are the remains of a building which evidently has not been contemporaneous with the other buildings of the forum; its masonry is somewhat different, and its walls are not quite parallel with those of the original buildings; it is, however, clearly a Roman work, and some fine specimens of Samian ware were found in it. In a corresponding position on the east side of this open space is the concrete floor of a building of somewhat larger dimensions.

On the north side of this open space, or court-yard, which we have now described, is found a row of pillars standing in a line drawn between the southern pillars of the eastern and western gateways of the forum. These pillars are four

in number, and are separated 15 ft. 6 in. from each other and from the southern pillars of the eastern and western gateways, and immediately beyond this row of pillars is the road, 8 ft. 6 in. wide, running between the eastern and western entrances into the forum.

After crossing this road, which was probably covered by a roof, and looking to the north, you see before you an open market-place 54 feet square, having on the east and west sides a covered colonnade about 15 feet wide, the roof of which has been supported in front on each side by six columns; a stone gutter being carried in front of the columns to receive the water falling from the roof of the colonnade. These pillars are 1 ft. 11 in. square, and some part of each of them remains in its place. Along the south, and also along the north, side of the square market-place, is a wall of superior masonry, through each of which have been five apertures, two of them being entrances into the colonnade and three of them entrances into the open market. These walls have been much damaged by time and the hand of man, but the knowledge of what is wanting in the one is supplied by the other, so that a correct notion of both may be attained. The southern wall adjoins the road above described, between the eastern and western gateways of the forum, and the northern wall abuts upon a passage 8 ft. 6 in. wide, crossing the forum at its northern extremity.

Some of the slates that had been used in the roofs of the colonnades were found among the *débris* of the colonnade; they consist of thin layers of sandstone, pierced for a nail. The market-place and the floors of the colonnade have been paved with large flag-stones, some of which remain, though in a broken and battered condition. The foundations of the columns, particularly on the west side, are about a foot deeper than the general floor of the forum. This is in conformity with what is seen in every station, and every building connected with the Wall. Every structure has been once at least, often twice or thrice, exposed to the devastations of the enemy. When the imperial army has again got possession of their own they have restored their buildings hastily, without stopping to remove the whole of the *débris*, consequently at a higher level than the original.

Such is a general description of the forum of Cilurnum. This is the first time that a structure of this kind has been traced in a Mural garrison, and the discovery may be considered as of importance as it throws new light upon the nature of the Roman occupation. It is not to be supposed that buildings of this elaborate nature would exist in the smaller stations, but only in those of large size and situated in populous and important places.

In the course of excavating the forum a fragment of an important inscribed slab was found, which is shown in the accompanying woodcut.^a



INSCRIBED TABLET FOUND AT CILURNUM.

On a label are the well-executed letters,

[S]ALVIS . AVGG
[F]ELIX . ALA . II . ASTVR
[ANTONINIAN]A?

and under the label is the head of a standard-bearer, holding a vexillum, on which is inscribed—

VIRTUS
AVGG

It is greatly to be regretted that the rest of the stone has not been discovered; it would probably have given us the figure of the standard-bearer complete. The first letter on the first two lines has also been broken off.

The inscription is an interesting one. It, no doubt, is to be expanded thus: "Salvis Augustis felix ala secunda Asturum Antoniniana"—"The emperors being safe, the second ala of Asturians styled Antoniniana is happy." This expression of goodwill on the part of the regiment forming the garrison of Cilurnum seems not to have been very genuine or very permanent. The second G of AVGG at the end of the first line, importing the plural number, has been purposely but not

^a This woodcut, which was prepared for the *Lapidarium Septentrionale*, has been kindly lent by John Clayton, Esq. F.S.A.

effectually erased; the word ANTONINIANA has been completely erased with the exception of the last letter, of which a portion remains; and the second G of the AVGG on the standard has also been partially obliterated. No doubt one of the emperors had fallen into disgrace and been deposed, and the regiment, sympathizing with the Prætorian guard at Rome, treated their former favourite with contumely and obliterated his name.

The question is, who were the emperors referred to? Another large slab found at this station^a has borne the names of Marcus Aurelius Antoninus, the name assumed by Elagabalus, and of Severus Alexander. This stone, like that which we are discussing, has extensive obliterations on it. The lettering on both stones is of precisely the same character, and the ligatures are identical. We know that when Elagabalus, or Heliogabalus, as he is sometimes called, was murdered and tossed into the Tiber, his name was obliterated from inscriptions. The difficulty in ascribing the newly-found inscription to the short reign of Elagabalus is, that, so far as we know, Severus Alexander did not in the lifetime of his predecessor enjoy the title of Augustus. On the slab that we are comparing with the present one he is styled NOBILIS CAESAR. IMPER[II] [HERES]. Notwithstanding this objection I cannot help thinking that the potentates referred to are Elagabalus and Severus Alexander. As the inscription is a short one, and there was not space on the stone for making the distinction between the recognised emperor and one who was only heir to the empire—the device of making the duplication of the G in the contraction of AUGUSTI represent them both may have been allowed. If this conjecture be correct the inscription will belong to about A.D. 221. Dr. McCaul,^b on the ground that there is no evidence that Elagabalus and Alexander were united under the title of *Augusti*, thinks it highly probable that the emperors were Caracalla and Geta, that the date is A.D. 211, after the death of Severus, and that the second G was erased after the murder of Geta in A.D. 212. The objection to this supposition is, that, as Publius Septimius Geta did not bear the name of Antoninus (which his brother did), the epithet *Antoniniana*, which we presume to have been the nearly obliterated word in the last line, cannot have had reference to him. Our reason for supposing that the word has been *Antoniniana* is that it will just fill the space, and that a trace of the last letter, A, still exists.

It may be some corroboration of the opinion thus expressed to observe that

^a *Lapidarium Septentrionale*, No. 121, p. 67, and the works there cited.

^b *Canadian Journal*, 1873.

the like liberty, no doubt for the sake of brevity, is taken in the coinage of the Empire. Thus on the reverse of some of the coins of Maximinus, whose son Maximus never attained the rank of Augustus, we have the legend VICTORIA AUGUSTORUM; the same legend also occurs on the reverse of coins of Maximus, though on the obverse he is only styled CAES. GERM. These examples have the more force, as the personages Elagabalus, Alexander Severus, Maximinus, and Maximus were nearly contemporaneous. Alexander was slain A.D. 235, and Maximinus and his son A.D. 238.

One incidental circumstance I cannot help mentioning before I conclude. Whenever an excavation is made in any of the stations on the Wall, a large quantity of the bones of animals are exhumed. These consist chiefly of those of a small species of ox. Amongst them are portions of the horns of deer and the teeth of the boar. How did they come there? Can the occupants of the camp, when partaking of their food, have cast the bones, after having picked them, on the ground, and allowed them to remain there? The bones seldom or never show marks of the saw, so that the "joints," if such they be, must have been separated in accordance with the natural structure of the animal. The antlers of the deer have been sawn—probably for the purpose of forming handles for knives and kindred purposes.

If I am right in the conjecture I have hazarded as to the origin of these bones, it is probable that a custom so insalubrious only obtained in the latest period of Roman occupation. In consequence of the quantity of animal matter and of lime which is mingled with the *débris* which encumbers the Roman stations in the North of England the soil obtained from them is very valuable for agricultural purposes.

These excavations show how thoroughly the Romans occupied the country; how systematically they proceeded to bring the whole population under the influence of Roman law and Roman civilization; and they give us a clearer insight than we had before into the every-day life of Roman Britain as exhibited in the region of the Northern Barrier.

II. *Notes on the Life of Thomas Rainborowe, Officer in the Army and Navy in the service of the Parliament of England.* By EDWARD PEACOCK, Esq. F.S.A.

Read December 14, 1876.

THE want of a really good biographical dictionary of Englishmen is, perhaps, more felt by those whose vocation it is to investigate the details of the great civil war of the seventeenth century than by students of any other class. The fame of three or four of the leading spirits of the time has eclipsed in the common memory almost all the other people who took an important part in the struggle between Charles the First and his Parliament. Such must be in a great degree the case whenever the dramatic interest of the story centres in the actions of one commanding intellect or the misfortunes and errors of a single sufferer ; but there is, we believe, no other great crisis in modern history where the less known have been permitted to remain so entirely unknown as the time of which we speak.

Thomas Rainborowe, or, as printed books commonly give his name, Rainsborough, has not found his way into our biographical literature, and in the popular histories of the period there is little recorded concerning him save his tragic death. Yet his was a well-known name to contemporaries, and evidence survives to prove that he was one of the most active and energetic of the officers in the service of the Long Parliament ; and, furthermore, that, when the split had taken place between the Presbyterians and Independents, he was regarded, alike by foes and allies, as one of the most important members of the latter party. Of his family and ancestors we do not know much. They certainly ranked as gentle, but were probably of little note or distinction. His grandfather, also called Thomas, was the first of the line who has, as far as we have been able to discover, left any record of himself behind him. He was a sailor, and dwelt at Greenwich ; but he possessed a not inconsiderable leasehold estate at Claverhambury, in Essex, held under "the Right Honourable Edward Lord Denny,

Baron of Waltham holy Crosse."^a It has been suggested that he or his immediate ancestor may have been a Bavarian Protestant exile, but the only ground for the idea is the similarity of his name as commonly spelt with Raynesbury,^b the old English form of Regensburg, that is, Ratisbon. That foreign settlers in this country sometimes took to themselves surnames from the places from whence they came is probable, could be proved, indeed, if the investigation were worth the labour, which it is not on this occasion, for there seems here nothing but similarity of sound to give countenance to the conjecture that they were not of English blood except the fact that neither the name of Rainborowe, nor any spelling into which it could easily have been corrupted, or of which it might well be a corruption, occurs in any English name-list earlier than the seventeenth century that we have had the opportunity of consulting, and that Johannes Reynberg is mentioned in 1351 as one of the "mercators de hansa Alemannie" in *Die Recesse und andere Akten der Hansetage*, i. 83. The Rainborowes were, it has also been imagined, of Dutch extraction, and kinsmen or namesakes of a certain ambassador from the Seven United Provinces to Charles I., who is sometimes called Rainsborough.^c The ambassador's real name was John Van Reede, and he was Lord of Renswoude,^d and consequently commonly called after his domain, a name quite sufficiently like Rainborowe to account for the mistake. There are two fine medals of him by Simon, on which his titles occur.^e That the Rainborowes were an English family is, if not proven, made highly probable by the arms they bore, which are almost identical with those attributed in the romance to Guy of Warwick and his son Rainburn.

"Capten Ransbrowe" bore: Chequy or and azure, a Moor's head proper, wreathed argent, bearded sable,^f and Thomas Rainborowe, the Parliamentary Colonel, sealed his letters with a signet-ring bearing this coat. The shield of

^a Will of Tho. Rainborowe, dated 4 December, 1622, as quoted in the will of his wife, Margaret, dated 29 November, 1626, in Archiepisc. Reg. Cant.

^b Bayle's *Select Works*, pp. 449, 525.

^c Whitelock, p. 148.

^d Johan van Reede, Lord of Renswoude, son of Gerard van Reede, Lord of Nederhorst, by his wife, Machteld van Dint, born in 1593. In 1611 he was "chanoine," and in 1620 dean of the chapter of Utrecht. In 1623 he bought the seigneurie of Renswoude. He was many times a member of the States General of the United Provinces, and frequently employed in embassies. In 1644 he was despatched with Boreel and Joachimi to England with instructions to mediate between the King and the Parliament. He died in February 1682, leaving eight children by his wife Jacoba.—From information furnished by Dr. M. F. A. G. Campbell, Royal Librarian, the Hague.

^e These medals were executed in 1645 and 1672. See *Medallie History of England*, pl. xxiv. 4; *Vertue, Medals, &c.* by Simon, pl. xxii.; Van Loon, ii. 274, iii. 125. Specimens of both are in the British Museum.

^f *Heralds' Coll. Miscell. Grants*, iv. 89.

Guy of Warwick, after his assumption of pilgrim's weeds, is represented as bearing Checquy or and azure, a man's head affronté, filleted argent. It is the head of Colbrand, the Danish giant, whom he had slain. Rainburn, Raiburn, or Sir Raynbrown, was Guy's son, and he is said to have borne the above coat quartered with other imaginary ones.^a There is no reason for doubting that Rainborowe is one of the many English family names that have been assumed or given from the possession or home of the family. There is a Rainsbarrow in Cumberland, and a Rainsborough Camp near Charlton in Oxfordshire.^b

Thomas Rainborowe, the sailor, had two sons, Thomas, probably an armourer in the city, and William, who seems to have been brought up to the sea. Though not, apparently, in the constant employment of the Crown, William Rainborowe was frequently engaged in the public service, and often consulted when advice on naval matters was required. Lord Clarendon tells us that he was "an eminent commander at sea,"^c a compliment which he probably received from having successfully commanded the English fleet which was sent to attack the Sallee pirates in 1637. His naval instructions on that occasion and several of his letters concerning the business are preserved among the State Papers.^d There is also a curious journal of the expedition, in the form of a quarto tract, by a certain John Dunton, entitled, "A true journall of the Sally Fleet with the proceedings of the voyage, whereunto is annexed a list of the Sally Captives' names, and the places where they dwell." London, 1637. William Rainborowe's conduct in this expedition was thought very praiseworthy, for the King proposed to knight him, but he declined the honour; therefore an order issued that a gold chain and medal should be given to him worth 300*l*.^e

In 1627 we find William Rainborowe living at Wapping, and petitioning with others against the noxious smell of the alum-works there.^f In 1640 he was chosen a Member of the Long Parliament for the town of Aldborough, in Suffolk, and on the 12th of December of that year "Mr. Treasurer and Capt. Rainsborow" were appointed to represent to the King that ten sail of Turkish pirates were harassing our western coasts, and to urge upon the King that two ships then riding in the Downs should be forthwith sent to scour the seas.^g He never could have taken a very active part in the proceedings of that assembly, for on 14th of February, 1642, a warrant issued for a new writ because his seat had become vacant by death.^h

^a Row's Roll, 22, 23.

^b Fraser's Mag. February 1877, p. 169; Proc. Soc. Ant. 2d S. i. 324.

^c Ed. 1843, chap. xi. 646.

^d Stat. Pap. Dom. Car. I. vols. cccxxvii.-cccxxxix.

^e Stafford's Letters, ii. 129.

^f Stow's Survey of London, ed. Strype, 1755, ii. 41.

^g Com. Jour. ii. 50.

^h Ibid. ii. 429.

William Rainborowe left at his death several sons and daughters. We are only concerned with Thomas, who was probably the eldest. He, like his father, was a seaman, and there are several obscure notices in the pamphlets and newspapers of the time indicating that he had, before the breaking out of the Civil war, become known as a man serviceable in nautical affairs. Clarendon, who was no admirer of his, says of him that "he had been bred to the sea, and was the son of an eminent commander lately dead."^a

Perhaps he had gained experience under his father in the African expedition; no record of the fact, if it were so, has yet been discovered. The first time he emerges into daylight is in 1640, when we find him elected member for the borough of Droitwich. There is little evidence that he gave attention to his parliamentary duties in the earlier days of that assembly. After the war-storm had burst it is certain that he was almost constantly occupied in military or naval service. As he is never spoken of as a member of parliament in connection with the self-denying ordinance, it is probable that he was held not to come within its operation, as naval officers were formally exempt.^b This would certainly have been the case if his commission were that of a sea commander only. We do not trace Thomas Rainborowe in the very beginning of the troubles. His name does not occur in any of the various lists that we have seen of soldiers and sailors which were published in the winter of 1642-3. The first time he appears is in the following year, when we gather from a somewhat obscure notice that he had been engaged on the Irish service.^c In June he was serving in the fleet with the rank of vice-admiral as "commander of the great ship called 'the Lyon'" in the expedition for guarding the Irish seas, or rather for protecting England from Irish royalists being landed on her coasts. While thus employed he was successful in capturing a vessel that had sailed from Ireland "round about Scotland," containing two hundred Irish rebels bound for Newcastle-upon-Tyne. These were no doubt volunteers for the great northern army—Newcastle's Papist army—as the Puritans called it. Rainborowe at once took these unfortunates into Yarmouth, and then went in person to Westminster to report to the Parliament what he had done. A newspaper of the time says that an order was sent to the Earl of Warwick "presently to try and execute them."^d

Irish Roman Catholics and rebels who should come over to England for the purpose of taking part in our civil broils had frequently been threatened with

^a Hist. of Rebellion i. vol. edit. 1843, 646.

^b Husband's Ord. and Decl. ii. 634.

^c Com. Jour. iii. 68.

^d Certain Informations, 19-26 June, 1643; Com. Jour. iii. 137.

death. It was not, however, until more than a year after this that the bloody ordinance was issued by which "all Irishmen and all Papists born in Ireland" were exempt from quarter in case of capture.^a We may therefore pretty confidently conclude that whatever was the fate of these unhappy people their lives were not taken. Had the Earl done this, so atrocious a stretch of belligerent rights must have been widely known, and would have been severely dealt with by writers favourable to the royal cause from that day to the present.

In the latter part of the October of the same year we find that the Earl of Newcastle, who was then maintaining the King's cause with great spirit in the East Riding of the county of York, had taken Rainborowe prisoner at the siege of Hull. The only evidence of the fact we have seen is a notice in the Journals of the House of Commons^b of his wife's petition, begging that he should be liberated by exchange. As she calls him colonel, not vice-admiral, it is probable that he was now serving as a soldier. It was not till some years after this, until a regular navy and a standing army had been fully organised, that a clear and distinct line was drawn between the two services. During the parliamentary war officers in the army and navy so constantly changed employments that their titular designations became much confused in the common speech. It is not at all impossible therefore, though we have seen no evidence for it, that he was captured while serving against the King with his ship in the Humber. His wife's petition was at once listened to, and her husband exchanged for a certain Captain Kettleby.^c

Symonds the diarist tells us that he was at the muster at Tiverton in September 1644,^d otherwise this year remains at present a blank until December, when we meet with him doing good work for his masters at Crowland, in the fens of Lincolnshire. The old Benedictine abbey, part of which is at the present day used as a parish church, had at the beginning of the troubles been fortified as a

^a October 24, 1644. Rushworth's Hist. Coll. part. iii. ii. 783.

^b iii. 302.

^c Thomas Kettleby was captain of the *Swallow*, a ship of 160 tons, on the Irish seas before the beginning of the Civil war. He is called admiral of the ships that were "to lie upon the coast of Ireland to annoy the rebels" in the Parliament's answer to the King's message, August 1642. At the beginning of the troubles he forsook the service of the Parliament, but was captured shortly after by the Earl of Warwick. He was a prisoner, petitioning for his discharge, in April 1647. He was knighted on or before the summer of 1648, when Prince Rupert made him captain of his own ship, the *Antelope*. Clarendon, i. vol. edit. 1843, 272-676. Rushworth, iv. 777, vi. 449, 450. Hist. MSS. Com. Rep. v. 53, 161, vi. 173. Peacock's *Army List of Roundheads and Cavaliers*, 2d ed. p. 63, where the name is given as Kettley.

^d Page 73.

royal garrison. It is even now a strange picturesque place, standing on a little natural hill, very slightly raised above the boundless fen lands which surround it on all sides. These fens are now completely drained. In the days of the monks they were a wild morass abounding with wild fowl and fish, but impassable except in boats. When the rivers overflowed their banks, as they commonly did in winter, the bog became a large lake, and the Isle of Crowland was as truly an island as if it had been in the middle of the German Ocean. The Reformation was not favourable to the improvement of agriculture in Lincolnshire. Desolate as Crowland must have been in the monastic time, we have good reason for believing that it had become still more so during the century which followed the fall of the religious houses. The monks, though they could not get rid of the waters, had, by means of sluices, banks, and other artificial works, brought them under some control; but the non-resident lay landlords had shown little interest in maintaining and improving these works, and it would seem that in the reign of Charles I. Crowland had become a far more desolate region than it had been under the Plantagenet kings. In the spring of 1643 Captain Welby,^a a scion of a powerful and ancient Lincolnshire family, held it for the King; but the place was taken, after a stout resistance, by Oliver Cromwell.^b The royalists were however again in possession in 1644, but in the April of that year Captain Styles, the governor, was compelled to surrender to Col. King.^c In the autumn however the chance of war once more threw Crowland into the hands of the Cavaliers, though when it was taken, or by whom, does not seem to be at present known. Rainborowe was at this time serving under the Earl of Manchester and was dispatched to endeavour to recover it. The work was a difficult and dangerous one at any time by reason of the fenny nature of the country and the numerous dykes by which it was intersected; now the undertaking was rendered much more arduous by the winter floods.

It would seem that the latter months of 1644 were exceptionally rainy in the eastern counties, and that nearly all the low country was flooded. Under these circumstances it was impossible to attack in the ordinary fashion, so Rainborowe prepared many long boats, and mounting ordnance in them succeeded in storming some important outworks. The siege then became a blockade and the

^a Philip Welby, eldest son of Sir William Welby of Gedney, K.B. by his second wife Susan, daughter of William Fitzwilliam of Mablethorpe, co. Lincoln. Baptized at Gedney, 17th November, 1600; buried there 2nd December, 1658.

^b Vicars's *Jehovah-Jireh*, i. 322; *Cromwelliana*, p. 4.

^c Vicars, ii. 203.

eventual surrender of the place was rendered certain. The royalists held out bravely. Crowland was not yielded until the bread was all done, and the inmates had lived for some time on roots, and had been entirely without salt for sixteen days. The place was, however, recovered without loss of blood in one of the early days of December, and remained a parliamentary garrison until the end of the war.^a

Of Rainborowe's occupations during the rest of the winter we have no account. Fairfax was then engaged in organizing the army which in the following June shattered the royal forces at Naseby.

On the 18th of March the Lords and Commons confirmed the list of officers which Fairfax had submitted to them "without any alteration." In this list Rainborowe's name appears as a colonel of foot.^b

There is nothing among the extant Fairfax correspondence, so far as we can ascertain, to indicate that before this time Rainborowe was personally known to Fairfax. The Crowland exploit had made him a much talked of and popular man, and the pamphlets and newspapers of the day had spoken of his services there in terms of exaggerated praise, comparing the old abbey which had so often changed masters to Dunkirk, Berwick, and Calais. To that section of the Puritan party who did not understand the art of war the holding of what they were pleased to call the key of the fen country was a point of honour. From this time forth Rainborowe was constantly in active service. On one of the latter days of May he was despatched by Fairfax from the leaguer before Oxford to attack Gaunt House, a royalist garrison about eight miles from that city. It fell into his hands by surrender early in June.^c

On the 14th of the next month he was in his place at Naseby—commanding the reserves in conjunction with Hammond and Pride—and contributing not a little to the success of the day: on the 17th he was one of the commissioners sent by Fairfax to treat for the surrender of Leicester, and on the 19th of July took a prominent part in the storming of Bridgwater; a few days after he was at

^a Vickers, iii. 76. Weekly Account, 11th December, 1644. This newspaper misprints Rainborowe's name "Gainsborough" and "Gaiynsborough." Thomas Rainborowe is, however, certainly the person meant. A similar misprint of "Gainsborough" for Rainborowe occurs in Rushworth's Hist. Coll. part iv. ii. 750. In this case no one can doubt that it is a mere misprint. It is almost certain that no officer called Gainsborough ever served in the parliamentary armies.

^b Whitelock, p. 137.

^c Sprigg's *Anglia Rediviva*, p. 25; *Mercurius Civicus*, May 29, June 5, 1645; *Perfect Diurnal*, June 2-8, 1645; Dugdale's *Diary*, 29th May, 1645.

Sherborne, and on the 21st of the same month, after a three days' siege, Nunney Castle surrendered to him.^a

In the early part of September Bristol was besieged. After it had fallen Cromwell, by order of Fairfax, wrote an account of the storm to William Lenthall, Speaker of the House of Commons. This letter has often been printed. In this important dispatch Colonel Rainborowe is most highly spoken of. "He had the hardest task of all at Pryor's Hill Fort, attempted it, and fought three hours at it." The place was very high, a ladder of thirty steps barely reaching to the top, but Cromwell says that Rainborowe's "resolution was such that notwithstanding the inaccessibleness and difficulty he would not give over." Four pieces of cannon were mounted here, and these were so well supplied with round and case shot that the royalists did great execution. The besiegers were "at push of pike" for two hours, standing upon the palisadoes, but could not force their way in. At length Colonel Hammond came up to Rainborowe's assistance, the Pryor's Fort was taken, and almost all its brave defenders put to the sword. This went far towards rendering Bristol untenable; the town was, moreover, on fire in several places—set on fire by the royalists, as Cromwell thought, but really most probably the result of accident. "This begat a great trouble in the General and us all; fearing to see so famous a city burnt to ashes before our faces." While, however, Fairfax and his brother officers were sorrowing over the impending conflagration a trumpet arrived from Prince Rupert desiring to treat for surrender. To this Fairfax gladly assented, and nominated Colonels Montague, Rainborowe, and Pickering as commissioners for the affair. What remained of the royal garrison marched out of Bristol on Thursday, 11th September.^b

On the 13th of September Rainborowe was dispatched with a brigade, consisting of Skippon's, Herbert's, and Pride's regiments, to take Berkeley Castle, the only important royalist garrison left in Gloucestershire, and which was being

^a Sprigg, pp. 25, 41, 77, 91, 100.

^b Rushworth, part iv. i. 65; *Archæologia*, xiv. 129; Carlyle's *Letters of Cromwell*, i. 185; Sayer's *History of Bristol*, ii. 299, 452. Sayer speaks of a pamphlet entitled "A True Relation of the Storming of Bristol. Published by Order of Parliament." He adds that it was "evidently written by a person who was in the rebel army at the time of the storm, and with Montague's brigade. He signs his initials J. R. probably Colonel Rainsborough." As Rainborowe's christian name was Thomas this must be a mistake. Two persons called Rogers, one a major and another a captain, were at this time in Montague's regiment, but we have not been able to ascertain their christian names. See Sprigg's *Anglia Rediviva*, p. 329.

stoutly defended by Sir Charles Lucas: it had already been invested by Colonel Morgan. On the 23rd of September the outworks and the church were stormed, and ninety prisoners taken besides forty others who were put to the sword. Three days afterwards the garrison surrendered on favourable conditions, although the governor had heretofore boasted that "I will eat horse-flesh before I will yield, and when that is done man's flesh." The terms were that the soldiers should march out without their arms, and Sir Charles Lucas with three horses and arms and fifty pounds in money.^a Early in December Colonel Rainborowe's regiment of foot and Colonel Fleetwood's horse were dispatched to support Colonel Bingham and Colonel Pickering in the blockade of Corfe Castle. They seem to have arrived there on the 16th.^b On Christmas Day Rainborowe was recalled to station himself at Abingdon, "to attend the motion of the King's horse and guard the associated counties, as also in relation to the straitening of Oxford."^c

It is almost certain that "the straitening of Oxford" was really the sole reason for this movement. In the then position of affairs the associated counties, that is, Norfolk, Suffolk, Essex, Cambridgeshire, Hertfordshire, and Huntingdonshire, could not possibly be in need of protection, for even before the battle of Naseby all eastern England, with the exception of Newark and Belvoir Castles, was in the hands of the Parliament.^d It is certain that the King was of this opinion, for in "the Reasons why his Majesty sent the two Houses his Propositions of December 26, 1645," a document preserved among the Clarendon State Papers, which is important in several respects, as showing what were really the views of the King and his advisers at this juncture, we find it stated that "the western horse are drawing towards Oxon. and are to join with the other forces which are come from London under Colonel Rainsborough, and all that can be spared from Coventry, Warwick, Gloucester, Northampton, and out of Buckinghamshire, which, it is believed, will in all make no less than 8,000, and 4,000 horse and dragoons, and are designed presently to block up Oxon. at a distance."^e

Rainborowe had his winter quarters at Abingdon, or in one or other of the towns in the near neighbourhood of Oxford. On the 10th of March, 1646, he

^a Rushworth, part iv. i. 90, 94; Sprigg's *Anglia Rediviva*, pp. 133, 139; *Perfect Diurnal*, Sept. 1-8, 22-29, 1645; *Hist. MSS. Com. Rep.* v. 356; *Carter's Relation of Expedition of Kent, Essex, and Colchester*, p. 242; *Earl de Grey's Mem. of Sir Charles Lucas*, 21.

^b *Banks's Story of Corfe Castle*, p. 215; Sprigg, p. 174; *Fairfax Correspondence*, iii. 261.

^c Sprigg, p. 174.

^d See a most carefully compiled map of the political condition of England, on 1st May, 1645, in *S. R. Gardiner's First Two Stuarts and the Puritan Revolution*, p. 143.

^e Vol. ii. 198.

was in command of the forces before Banbury, with power of martial law given to him.^a On the 18th of March he was at Whitney, from whence he removed on that day to Woodstock.^b On the 11th of April he was still there, as is proved by the following letter now in the Bodleian Library :

Honored Sir,

Being desired ffrom one in Oxford who since my coming hither hath giuen good intelligence to grant a pass to one M^r ffontaine^c only to come to my quarters, I apprehending he might giue me some very aduantageous information did it. He came to me Thirsday night last and after some discourse concerning the present Condition off Oxfford which he gaue very fully he acquainted me that about September last was thre yeres, he was committed by your honourable House during pleasure, and after eleuen monthes imprisonment mad his Escape and hath euer since continued in the Kings quarters, and was now come to render himselfe my prisoner desiring to make his humble addresses to your house with submission in the ffirst place to obtaine your fauour or if not, Chusing rather to submit to your iustice then returne to the Kings quarters. I intended by reason off his so late coming ffrom Oxford to haue sent him directly to you, but considering the multitude off those already there, I thought it better to send him to Alesbury where hee now is; that place being nere if you shall think fit, by reason of his ability to giue an account off Oxford, to send for him vp, iff he may receiue any ffauour. I am confident he is so ingenious as that it will not be ill bestowed. Sir I humbly desire all iust fauour ffrom you and that you would please to ffurther the report of the business betweene M^r Hudson and my selfe in your howse; hereby you will much ingage him who already is your reall ffriend and

humble seruant

THO. RAINBOROWE.

Woodstocke Aprill the

11. 1646.

ffor the Honourable and much Estemed
ffriend M^r Corbett Chaireman to
the Committe of Examinations
these present.^d

^a Whitelock, p. 196.

^b Dugdale's Diary, edited by William Hamper.

^c The person here mentioned is John Fountaine, a barrister of Lincoln's Inn. He had been imprisoned for refusing to contribute to the support of the London trained bands, and, as Spalding the Scottish historian tells us, for "giving out urther speeches aganes the parliament." (Whitelock, p. 63; Spalding's History of Troubles, Bannatyne edit. ii. 88.) He compounded for his estate for the sum of 480*l*. (Dring's Catalogue of Compounders, p. 36), but afterwards became reconciled to the government. He was appointed by Act of Parliament 8th April, 1653, one of the judges for the probate of wills (Scobell's Acts and Ordinances, ii. 232), and created a serjeant-at-law in 1658. He lived to see the Restoration. There is a portrait of him in the possession of Andrew Montague, Esq. of Melton, co. York. (Hailstone's Portraits of Yorkshire Worthies, i. 88.)

^d Tanner MSS. lix. i. 50.

A very short time after this, the precise day is uncertain, but the news seems to have reached Westminster on the 17th of April, he received some loss in an unsuccessful attempt to storm Woodstock Manor.^a

The following either relates to the real or pretended desire of the King to end the war by throwing himself into the hands of Lord Fairfax,^b and to the surrender of Woodstock. The former, if the design were ever entertained, was a mere dream, fruitful in nothing but some addition to party hatreds. The latter took place on or about the 25th of April :

Sir,

Yesterdaie morning Secretarie Nicholas (as by the King's command) desired Colonell Rainborowe's passe for the Earles of Lyndsey & Southampton, Sir William Fleetwood and M^r John Ashburnham to come and treat with him and anie else for surrender of Woodstock Mannor. Whereupon Colonell Rainborow sent for Colonell Fleetwood, Maior Disbrow, & Maior Harrison to be present. After much debate, the Earle of Southampton desired to propose what (Hee thought) might not onely giue us the possession of this but other garrisons. Wee said, If what he had to offer was within our capacitie wee should willingly heare : and He conceiued it was : namely, That forasmuch as the Parliament had declared a sauing to the King's person and his honour, If therefore wee (accordingly) would ingage ourselues for performance therof, to witt, that His person maie bee defended from violence & continued King, Then the King would come into our quarters (there to remaine, or where else you please to direct) and do what you should require of him : We replied we could onely (and that was our Duty) signifie to you theire offer. In fine wee agreed for surrender of the Mannor vpon conditions, this bearer can fully acquaint you, who was present att the whole. Wee beseech you give us your commands touching the premisses, wherein and in all things to our power None shall more faithfully endeauor your seruice then Sir

your most humble and
faithfull seruants

THOMAS RAINBOROWE, CHARLES FFLEETWOOD.

26 Aprill 1646.

For the Honorable William Lenthall, Esq.
Speaker of the house of Commons
these Present.^c

On the 30th of April the Parliament received dispatches from Colonel Rainborowe saying that the King had escaped from Oxford, and that the Duke of Richmond, the Earl of Lindsey, and others, had come to him and cast themselves "upon the mercy of the Parliament."^d

The original letter does not seem to be preserved among Lenthall's corre-

^a Whitelock, p. 201.

^b See the King's instructions, *post*.

^c Tanner MSS. lix. i. 89.

^d Whitelock, p. 202.

spondence in the Bodleian Library, and I have not met with it in a printed form. In the early days of May he was busily engaged in assisting Fairfax in the preparations for the siege of Oxford. It fell to his lot to superintend the building of a bridge over the Cherwell near Marston, and about the 11th Rainborowe, Harlow, and Lambert were nominated to treat for the surrender of the city with the Royalist Commissioners, Sir John Mounson and Philip Warwick.^a

Oxford surrendered on the 24th of June.^b Colonel Whalley was besieging Worcester, but the forces under his command were mostly cavalry; "there was a great want of foot for a regular and close siege."^c This deficiency was at once supplied by the General sending Rainborowe with a brigade thither, who established his quarters close upon the royalists' lines, and raised a mound which commanded their great fort. The place was now untenable. Articles of capitulation between Colonel Rainborowe and Colonel Henry Washington,^d the governor, were signed on the 19th of July.^e On the 1st of August Fairfax wrote from Bath to Lenthall, the Speaker, commending the "discrete carriage" of Colonel Rainborowe "in the taking in of that citty," and requesting that he may have "the charge of it seing you have found him very faythfull, valient, and successefull in many vndertakings since you put him vnder my comands."^f

No evidence is at present known which proves whether this letter resulted in Rainborowe's being appointed governor, or whether it was disregarded, except an undated Catalogue of Pensioners in the Long Parliament,^g which contains the entry, "Thomas Rainsborough, a skipper of Lime-Regis, colonel, governor of Woodstock, and Vice-Admiral of England." The document is scurrilous and full of obvious misstatements, so that little confidence can be placed in it. The appointment was certainly not at once filled up, for, on the 24th of July, the motion that Colonel William Liggon be governor of Worcester was passed in the negative. However this may have been, it is certain that Rainborowe could not have become at once the acting governor, for in the early part of August he and Colonel Birch were aiding Colonel Morgan at the siege of Raglan Castle."^h

^a Sprigg, pp. 258, 262.

^b *Micro-Chronicon, or a briefe Chronology of the Time, 1647.*

^c Sprigg, p. 290.

^d Henry Washington, eldest son of Sir William Washington, Knt. by Anne Villiers, half-sister to George first Duke of Buckingham. *Chester's Registers of Westminster Abbey* (Harl. Soc.), p. 14.

^e Rushworth, part iv. i. 286; Sprigg, p. 291.

^f Tanner MSS. lix. ii. 444.

^g Somers Tracts, vii. 60.

^h *Com. Jour.* iv. 627.

ⁱ Whitelock, p. 218.

The Marquess of Worcester surrendered that stronghold to Fairfax on the 19th of August.^a

From this time until late in the following spring we have failed to find any trace of Rainborowe in the literature or correspondence of the time, except that in a document preserved among the Lenthall Papers, entitled "The sume of the Commissioners proceedings att Saffron Walden in order to the seruice in Ireland,"^b it appears that the officers of Rainborowe's regiment of foot had on the 22nd of April, 1647, empowered two of their captains, George Drury and Thomas Cramer, to arrange with the Commissioners sitting there on behalf of the regiment. Whatever conclusion may have been then come to, it is certain that Rainborowe's regiment did not go to Ireland on that occasion. The Saffron Walden proceedings were intricate, and no intelligible account of them has yet been evolved from the documents in which their memory has been preserved.^c

The ordinary histories of the year 1647 are much occupied by details of disputes between the Parliament and the army, and between the officers and the men under their control—disputes which often reached and sometimes passed the faint line which separates insubordination from actual mutiny. It would be out of place now to enter, even in the briefest manner, into an examination of these distracting troubles. It should, however, be remembered that the great Independent army, which had now become completely victorious, was something more than a mere military force, which had faithfully discharged the duty imposed upon it by "the supreme authority," as it became fashionable a little later to call the Parliament. The kind of liberty it had fought for was something of a very different character from—in some respects, indeed, almost the exact contrary of—the liberty for which the Long Parliament had by its aid so successfully levied war upon the King. Questions as to arrears of pay, disbanding, and other things of a like kind, which come so wearisomely to the surface in reading the contemporary literature, were to a great extent mere party cries, used, unconsciously by some but quite consciously by others, for the purpose of making clear the fact that the army was now the real governing power in the kingdom. Rainborowe was an Independent, and it can hardly be a matter of doubt that he sympathized in a great degree with the popular feeling of the soldiery. Whether he did so entirely, and had in what followed an express understanding with his soldiers, or whether he did in fact serve the Parliament

^a *Micro-Chronicon*.

^b Tanner MSS. lviii. i. 62.

^c cf. Rushworth, part iv. i. 485; Whitelock, p. 243; Cary's *Memorials of the Civil War*, i. 201.

faithfully as far as circumstances would permit, is a matter on which it is not wise to speak positively. His own testimony cannot be made to tally with what we learn elsewhere, but then that testimony consists of a letter written at the very time the events were taking place, while what we learn from another quarter is avowedly the information given by an opponent, and information too, which, as we have it, dates from long after Rainborowe's death, when the world was so altered that it was not only safe but popular to traduce the memory of a leader of the Independents.

In the spring of 1647 Jersey was still held for the King, and now that the war was over in England it became important that this insular dependency should be subdued. Rainborowe therefore made propositions and entered into an engagement for taking the island, and, on the 1st of May, the Parliament ordered to be paid to him on account for this service 6,700*l*. A great quantity of army stores, including pickaxes, shovels, spades, hand-barrows, ladders, coats, and "snapsacks," were also to be delivered out to him.^a The draft order for Rainborowe to command the forces for the reduction of the island is dated the 6th of May.^b At this time Rainborowe was in London, perhaps attending to his duties as a Member of Parliament, or preparing for the Jersey expedition. News, however, reached the House that his men were in mutiny, or, at least, in much disorder, and on the 28th of May he was peremptorily ordered to repair to his regiment, and to detain it in the place where he should find it "until this House take further order."^c

His own account of the condition of affairs when he reached his regiment is still extant in a letter to the Speaker :—

Sir

According to the order of the Howse I came downe to my regement on sabbath day morning.^d I found them quartered at Long Witnam, Sutton, and the townes there aboutes being with in two or thre miles off Abington. When I came I ffound most off my officers Come vp to the generall quarters off the regiment, who all the time till then Had not dared so much as to appere amongst them, but they Had not bene long in there quarters ere the Maiors Serient was almost killed by his owne Souldiers, and his Ensign if hee had not excedingly well defended himselfe against another company, hee had beene cut all to peces, but in defending him selfe he hath wounded diuers off them, two whereoff I am confident cannot possible scape with life. They were quartered so thicke that the people were not able to prouide them foode which caused the souldier to exact money from them, at the rate off halfe a crowne a day a man; ffor the amending off which

^a Com. Jour. v. 159; Whitelock, p. 245; Clarendon State Pap. MS. 1647, 2515.

^b Hist. MSS. Com. Rep. vi. 173.

^c Com. Jour. v. 193.

^d May 30.

seuerall complaintes I found no other way then to draw them to a rendezuoz, where hauing acquainted them with your order to me and vsed all the Argumentes I could to persuade them yeild obedience thereunto, there was not any man returned the least word of ansuer where vpon I peremptorily comanded them to repare to geather no more vnles by spetiall order, but to kepe there seuerall quarters, and not to offer to draw out or march any way with out the saide order, on paine off the highiest and most seuer punishment. They are returnd to most off the same quarters I found them in only with a litle enlargement. The maine being one company which is my lefftenant colonelles which I caused to quarter in the towne of Abington to kepe guardes and not to suffer any off our souldiers to goe to Oxford, which otherwise I am confident they would have done in great numbers, pretending to se there ffellowe souldiers. I hope that course I have taken, and shall vpon all occasions take, by myselfe and officers, will preuent all ffuture miscarriage in them, and although I cannot engage for them, yet there shall nothing of care and duty be wanting in him who is

Sir

Your most humble and faithfull Seruant

THO. RAINBOROWE

Cullam June the
ffirst 1647.

ffor the Honourable William Lenthall
Esq. Speaker off the Honourable
House of Commons these
present.^a

The expression in the order of the House that he should repair to his regiment, and "detain it in the place where he should find it," is singular. On the 12th of May the House knew, or perhaps it would be safer to say, believed, that those troops were quartered at Portsmouth and Petersfield ready to take ship for the expedition against Jersey.^b Between this period and May 28th they had evidently received intelligence of their insubordination or mutiny, knew probably that they were on the march northwards to join their comrades, but they were ignorant of the precise line of march they had taken or the exact point at which they were aiming. That Rainborowe was not with them but in London is certain both from the Journals of the House and from the first paragraph of his letter to the Speaker. That he had obeyed the order of the House, to join his regiment with all promptness, is also certain, for the order was not made till the afternoon of the 28th, and he arrived at Culham, which is about fifty miles from London, on the morning of the 30th.

Denzil Holles gives a very different version of these transactions. His words are worth quoting as a specimen of the way in which what is called contemporary history is sometimes written.

^a Tanner MSS. lviii. i. 125.

^b Com. Jour. v. 169.

"At the very same time Colonel Rainsborough does the like with his regiment, which was at Petersfield in Hampshire, design'd for Jersey, and so far upon the way, himself being attending the House of Commons, of which he was a Member, and pretending to prepare for that employment which had been entrusted to him; but, in truth, to give his soldiers opportunity to mutiny, as the rest of the army did; who to give them the more time for it would not presently acquaint the House with the intelligence he had receiv'd of their disorder, but having it in the morning, kept it to himself till towards the evening, even denying his knowledg of any such thing, when Sir William Lewis inform'd the House of it, and about five or six a clock in the afternoon (the House then by accident sitting, as these deportments of the army gave them cause sufficient) spoke of it, said they were in a great distemper, resolv'd not to march to the sea side, but return to Oxford; whereupon being sent down to quiet them, and reduce them to obedience, he went immediately, but put himself at the head of them, and instead of taking care for Jersey march'd to Oxford first, so to the army."^a

The assertion that Rainborowe was spending his time in London, not for the obvious reasons of attending the House of Commons at a most critical juncture, and of preparing for the Jersey expedition, but that he might give his men a better chance of mutinying, is highly improbable. It is nevertheless a charge which, from the nature of the case, it is impossible to disprove. The further statements are clearly false. Holles believed that Rainborowe, when sent to his regiment, went down to them at Petersfield, and marched at their head to Oxford; the truth being, as is fully proved by the Commons' Journals and his own letter, that he came up with them within a very few miles of that city. On Thursday, the 10th of June, was the general rendezvous at Royston, or Triploe Heath. Twenty-one thousand men were gathered together. It was, perhaps, the most memorable turning-point in the whole of the struggle between the great Independent army and the Presbyterian party in the Commons. That Rainborowe and his men were there does not admit of doubt, as his signature is attached to the letter to the Lord Mayor of London, which was signed by the officers of the army on the following day.^b On Tuesday, the 2nd of July, the Commons were informed by a letter from Fairfax, the Lord-General, that Cromwell, Ireton, Fleetwood, Rainborowe, Harrison, Sir Hardress Waller, Rich, Lam-

^a Memoirs of Denzil Lord Holles. 8vo. London, 1699, p. 95. cf. Mazere's Tracts, i. 245.

^b The original may perhaps have perished. There is a transcript among the State Papers, Domestic, 1647, p. 159, and it is printed in Rushworth, part iv. i. 554; this latter has some differences in the signatures, but Rainborowe's name occurs in both.

bert, Hamond, and Desborowe, had been appointed to treat with the Commissioners of the Parliament.^a About the 24th of July he served as one of the Army Commissioners for making terms with the King, who was then at Woburn. The Commissioners were with the King for upwards of three hours, but in the midst of the conference Rainborowe is said to have withdrawn, disgusted by the temporising language used by his companions.^b

The army was now closing in upon London; it moved a step nearer almost daily. On August the 3rd it had its rendezvous on Hounslow Heath, and on that very day the Lord-General dispatched a brigade under Rainborowe over Kingston bridge into Surrey,^c and the next morning, in the grey of the early dawn, the regiments of Rainborowe, Hewson, Pride, and Rosseter entered Southwark, and finding the city gate on London bridge shut, the portcullis down, the drawbridge hoisted, and a guard stationed within the fort, they planted two pieces of ordnance against it, and set a guard of their own also. In a short time the fortification surrendered, and the army became virtually master of London and Westminster.^d From obscure notices in the newspapers of the time it is probable that Rainborowe remained in the neighbourhood of London for several months. In the latter end of August he was certainly at Fulham, living in the house of his brother, Major William Rainborowe.^e

On the 27th of September Vice-Admiral Batten laid down his commission. He had faithfully served the party to which he had attached himself during the whole of the war, had acted "a great part in the first alienating the fleet and the affections of the seamen from the King,"^f and incurred much ignominy for having dared to fire on the Queen at Bridlington Quay, when she landed there in 1643 with the Dutch army stores that she had bought with the crown jewels.^g Batten was, however, a Presbyterian. He had not fought with the intention of subverting the monarchy, or placing the estates of the realm under the absolute control of an armed force. Every day the condition of the country was becoming,

^a Lords' Jour. 2 July. Whitelock prints this list, omitting the name of Sir Hardress Waller, and supplying that of "Major Rainsborough," p. 257. Thomas Rainborowe had a brother William who was a soldier, but the variation is probably a mere misprint.

^b Thurloe Stat. Pap. i. 96; Godwin's Hist. Com. ii. 379, quoting Berkeley Mem. pp. 30, 35.

^c Unsigned letter in Rushworth, part iv. ii. 750.

^d Rushworth, part iv. ii. 752.

^e Lyons, Environs of London, ii. 345, Perf. Occur. Aug. 27.

^f Clarendon, p. 646.

^g Warburton's Prince Rupert, ii. 128, 217. See his references.

in the opinion of such as he, more and more hopeless. When the eleven members who were accused of treason by the army on the 16th of June absented themselves from Westminster, six of them fled to the coast and put to sea in a flyboat;^a they were captured when near Calais by Captain Lamming, one of Batten's subordinates, and taken on board the admiral's flagship in the Downs. Batten at once dismissed the fugitives.^b He, probably, did not violate any distinct instructions by so doing, but he must have known that it was an act distasteful to those who now had the real control of affairs. The power of the army had increased rapidly between that date and the 27th of September, on which day he laid down his commission, and Colonel Rainborowe was appointed in his place. His flagship was for the present the "Happy Entrance."^c He did not join the fleet for some time. We gather from the confused newspaper reports, and still more puzzling letters, of the time, that, with the exception of Harrison and Sir Harry Vane, Rainborowe was considered to be the most active and prominent among those who now hardly disguised their desire for a republican form of government. He was, on the 5th of October, acting as one of the Commissioners of the Lords and Commons for the Admiralty and the Cinque Ports, on which day, along with the Earls of Warwick and Manchester, John Rolle, and William Ashurst, he signed an order that Richard Loane, gunner of the "Fellowship," be removed to the sternmost of the frigates now building at Deptford;^d and he was present at a council of war (probably held in Putney church)^e on the 8th of November, when he intimated that the army was not disposed to make further address to the King.

At this expression of opinion Ireton professed himself so much opposed that he left the council in disgust, "protesting that he could come no more to be partaker of so high neglect and violation of reason and justice."^f

The King had fled from Hampton Court on the 10th of November,^g 1647, and the more extreme of the army leaders were fomenting dissatisfaction, dreading, or causing their followers to dread, that justice was not about to be done, and almost openly clamouring for the punishment of the King, whose escape they attributed to connivance on the part of some of those whom they had formerly

^a A large flat-bottomed Dutch vessel, whose burden is generally from 300 to 600 tons.—Admiral W. H. Smyth's *Sailors' Word Book*, *sub voce*.

^b Markham's *Life of Fairfax*, p. 298, quoting Holles's *Mem.* and Sir William Waller's *Vindie*.

^c Whitelock, p. 271; *Com. Jour.* v. 318.

^d Original order at Bottesford Manor.

^e Lysons, *Environs of London*, i. 408.

^f Clarendon State Papers, vol. ii. app. xli.

^g *Com. Jour.* v. 356.

trusted. The situation was extremely dangerous, and required prompt action on the part of Fairfax and his subordinates. He called a rendezvous at Ware on Monday, the 15th of November, and there occurred something very like a mutiny. One man, a soldier in Colonel Robert Lilburne's regiment, was shot in the sight of his comrades, and order of a kind was restored.

To what extent Rainborowe had sympathized with this movement is not clear.^a He was evidently considered by the soldiers somewhat in the light of a tribune of the people, as he and some others were chosen to present to the Lord General a document called "A Petition and Agreement of the people."^b His forces were not, however, it would seem, at any time quite in open mutiny. Whitelock's laconic remark is that "Colonel Rainsborough's and Colonel Harrison's regiments saw their errors and submitted."^c His conduct on this occasion rendered an investigation imperatively necessary. Cromwell is reported to have said that "speedy course must be taken for outing of" Rainborowe and Colonel Martin from "the House and army."^d On the following day it was resolved that Rainborowe should be summoned before the House,^e and on the 18th a letter from Fairfax giving details of his conduct was taken into consideration.^f On the 22nd it was resolved that the committee which had charge of the business should examine Rainborowe personally;^g and on the 9th of December, on the question being put that "Colonel Thomas Rainsborough, appointed Vice-Admiral, be ordered forthwith to go to sea," the House divided, and it was carried in the negative—Noes 61, Yeas 58.^h

On the 22nd Fairfax wrote another letter from Windsor "stating the deep sense entertained by Rainsborough of the late distempers and miscarriages in which he had been engaged and his resolution to avoid such errors for the future,

^a A royalist news-letter among Hyde's MSS. in the Bodleian, dated "15 Nov. 1647, old style," says that "it is verely thought this day that there will be a division of the army. Col. Rainsborough hath labour'd what he can with the horse to prevent it but cannot, for some are come with theire men 60 miles off and now each party drawes vp what strength he can." In the margin opposite Rainborough's name is written "He doth conceiue his party will proue too weeke at this meeting." Clarendon State Pap. MS. 1647, 2651.

^b Hist. MSS. Com. Rep. vi. 210.

^c Whitelock, p. 278; Rushworth, vii. 876.

^d It was reported at the time that Rainborowe and Henry Marten had "labour'd on Satturday last to impeach Cromwell and Ireton of treason."—News-letter dated 15 Nov. 1647, old style, in Clarendon State Pap. MSS. 1647, 2651; Thurloe State Pap. i. 96; Rymer's *Fœdera*, xx. 558.

^e Com. Jour. v. 359.

^f Ibid. 363.

^g Ibid. 366.

^h Ibid. 378.

and requesting he might be dispatched immediately to the command of the fleet."^a

The censure passed on Rainborowe, even when the Commander-in-Chief had reported unfavourably of him, having only been carried by three votes, indicates plainly how strong the party in the House now was which sympathized with the extreme views of the army leaders. When Fairfax, on Rainborowe's apology, had written in his favour it naturally won over many waverers. The question was put on the 24th that Rainborowe "be required forthwith to repair to his charge at sea as Vice-Admiral," when the Ayes were 88 and the Noes 66.^b The Lords raised some objections to this, but they were overruled.^c

Major Robert Huntington says, in the reasons which he gave for laying down his commission, that Oliver Cromwell, on being asked "how he could trust a man whose interest was so directly opposite to what he had professed, and one whom he had lately aimed to remove from all places of trust . . . answered that he had now received particular assurances from Col. Rainsbrough, as great as could be given by man, that he would be conformable to the judgment and direction of himself and Commissary-General Ireton for the managing of the whole business at sea."^d Huntington believed himself to have very strong reasons for suspecting the integrity of Cromwell and Ireton; his statements are therefore probably in some degree coloured by personal feeling.

On the 1st of January, 1648, Rainborowe received orders to repair to the Isle of Wight with such ships as he should consider needful for the occasion.^e Captain Burley's rash endeavour to deliver the King from Carisbroke Castle had just occurred,^f and, though he and several of his followers were in custody, the Parliament had good reason to dread that a further and more formidable movement might occur, which would be sure, if opportunity offered, to receive assistance both from England and from exiles abroad. The danger was apprehended to be greater, inasmuch as the Dutch Brasil fleet had been riding at anchor in close proximity to the Isle of Wight, and it was thought that they were lying in wait till a favourable opportunity offered for making a descent and carrying off the person of the King.^g

^a Godwin's *Hist. Commonwealth*, ii. 490. I have not succeeded in finding the letter from which he quotes.

^b *Com. Jour.* v. 403.

^c *Lords' Journals.*

^d *Thurloe State Pap.* i. 96.

^e Whitelock, p. 286; *Com. Jour.* v. 413; *Hist. MSS. Com. Rep.* vi. 216.

^f Clarendon, p. 629.

^g *Clarendon State Pap. MSS.* 1647, 2684.

On the 12th of January the House received letters from Rainborowe saying that he had appointed a guard for the Isle of Wight, and another for the Irish coast.^a

In the latter end of January or beginning of February the *Mercurius Melancholicus* tells us that Rainborowe's ship when near the Isle of Wight was passed by "the Dutch bound fleet from some parts of America," and that the Netherlanders "not vailing their topsayles" he fired upon them and killed six men. When the Admiral in command of the Dutch fleet remonstrated, Rainborowe is reported to have told him he fired upon him because he "would not strike his topsayles, in token of subjection to the King and Parliament," to which the Dutch Admiral is said to have replied, "he knew no King they had, [and] as for the State, he pleaded Preheminence, in behalf of his country, and that by way of seniority."^b

It is almost certain that the above is a mere fiction. The *Mercurius Melancholicus* is a most mendacious print. At our request Dr. M. F. A. G. Campbell, the royal librarian at the Hague, has most kindly had investigations made among the Dutch archives. He tells us that the gentleman who undertook to make these researches for him said that "he could not discover the least information relating to Vice-Admiral Thomas Rainborowe's assault on Dutch ships for refusing to lower their topsails to him. Moreover . . . the *Mercurius Melancholicus* contains details that prove it to be false; for instance, the sending on shore the killed six men by the Dutch Admiral The Dutch ships coming from America in 1647—1648 could be no men-of-war, but merchant-ships coming from Brazil, and belonging to the Dutch West India Company; of course no admiral was in command there."^c

On the 18th of February he writes thus to the Speaker from the Downes :

Honorable Sir

I should not discharge my duty iff I should not let you knowe that it very much Concernes you to spede fforth the ships appointed ffor the summer guard, ffor the Irish men of warr do not

^a Whitelock, p. 288.

^b Feb. 5-12, p. 39.

^c A story substantially the same as the above, but wanting Rainborowe's name, and with Swedes taking the place of the Dutch, had reached Hyde in the previous May. It is to be found in a MS. news-letter in the Bodleian Library, endorsed "Intelligence from London, 6 May," in Lord Clarendon's handwriting. "We had yesterday newes at the Exchange of a great fight at sea neere the [Isle] of Weight betweene 5 Parliament ships & 15 of the Swedes, which being laden with salt would not as they past strike to the Parliament ships, but being haylde answered that they would strike to the King of England's ships, but not to those the Parliament had by rebellion taken from their soveraigne. The fight continued all Wensday very hott, the newes of the issue whereof was dayly expected."—Clarendon State Pap. 1647, 2515. cf. Rushworth, part iv. i. 478, 481.

lessen but increase; and that in our channell, about six dayes since one Irish man off warr hauing twenty-two guns, and being very ffull of men, in one day nere vnto Plimouth toke fflower saile off Englishmen from what place they Came or whither they were bound I know not vnles it were one off them a ship of ten gunns belonging to Douer, who made a great fight but at last many men being killed and both the master's legs shot off with a great shot, she was forced to yeild. That night after they were taken two Irish men off warr more came to this ship that tooke these, they also hauing taken two or thre ships the same day but of what nation the relator cannot tell me, but it is to be ffeared they were also English. This man also saith that he was tould by an English man belonging to the Irish ship, that about ffive dayes before they were betwene the Ile of wight and Torbay cleuen saile off Irish together, that they then held a Consell, diuided into thre squadrons, two consisting off thre ships in sum, the other off ffive, giuing this reason, that iff they should mete any of our single ffrigotes, now in the channell, they hoped that by ouer powering them with men, they might carry them, but if not, should be able to defend them selues.

I acquainted the house at my last being there, and am still certain there is no way to preuent this but by hauing two Squadrons Constantly plying in the Channell, the one to the Westward as ffar as the land's end, the other at the same time to be coming eastward as far as Doue[r], and so backe againe and this is impossible to be put in execution till the fflote be come fforth.

Sir, had I not had the occasion a boue expressed to haue writ to you, I should haue bene bould to haue presented these ffollowing lines vnto you, concerning the Corporation of Carpenters, that you would please to put the Howse in mind off an ordnance concerning them, which came ffrom the Lordes to you many monthes since, was once read and ordered a second reading, but something else coming on that day, it hath hitherto layen aslepe. I confes I am not much in loue with Corporations, yet I am Confident, no Company in the Kingdome can shew so mu[ch] reason ffor the Kingdome's aduantage why they should be continued, as these, and were I with you, I knowe I could giue vndenyable reasons ffor it; yet I doe not herein pleade ffor all the power they haue fformerly had but only that the house would put it into such a speddy way as that the kingdome may not suffer through the vnsetlednes thereof, but ffor the power, so they may but be off vse as fformerly, I believe they (as all other honest men) well desireth be as little arbitrary as may be. Sir, the Confidence off the aduantage the dispatching of this will be to the publique, makes me earnestly entreat you to gaine the house to some speddy day ffor the taking vp a resolution herein. I desire you would please to remember your promise off removing the Parson to some other liuing which will very much ad to the many obligations laide vpon him who is

Your very humble and ffaithfull Seruant

Downes february
the 18th 1647.

THO. RAINBOROWE
ffor the Honorable William
Lenthall Esq. Speaker off
the Honorable House of
Commons

these present.^a

^a Tanner MSS. lviii. ii. 707. The signature to this letter will be found with the Pedigree in Appendix B.

Much is to be found in the newspapers of the time concerning these Irish ships which preyed upon the English traders in the channel. The common opinion in England was that they were mere pirates. It is probable, however, that they were fitted out by Irish royalists and really bore commissions from those who represented the King's interests there.

As to the request to Lenthall that he would help forward the business of the Carpenters' Company, nothing seems at present known. On the 29th of July, 1642, the House of Commons ordered that the masters and wardens of the Companies of Carpenters and Wheelwrights should take some course to hasten the making of wheelbarrows and carriages for the train of artillery for Ireland. This, however, is too far removed in time to be the case in which Rainborowe was interesting himself on their behalf.^a

During mid-winter and spring Rainborowe was engaged in reorganizing the fleet. The work does not seem to have been completed until the middle of March, for it was not until the 17th of that month that Parliament confirmed the appointment of the commanders of the vessels for the next summer fleet. Of this force Rainborowe was vice-admiral and his flag-ship the *Reformation*. His former vessel, the *Happy Entrance*, does not occur in the list.^b

On the 25th of April a letter from Rainborowe was read in the House of Commons containing an inclosure from Prince Philip, son of the Queen of Bohemia, to his brother the Prince Elector, and instructions were given that Sir Henry Mildmay should write to the Vice-Admiral signifying the pleasure of the House that Prince Philip should come to town to visit his brother.^c

Rainborowe's letter on this occasion has not been discovered. The next we have of his was evidently written in great haste. The flight of the Duke of York from St. James's Palace^d had been made public some days before, but the Vice-Admiral's letter was probably the first intelligence received in England of the precise place to which he had gone.

Mr Speaker

This is only to let you vnderstand that the duke off Yorke did certainly land at at (*sic*) ffushing on sabbath day morning last^e about eight a cloke in the morning. He went ouer in a small Pinke^f off that place which lay ffourteen dayes in the riuer, purposely for him. He had with him, when he landed about ffourtene persons, thre or ffour of them being wimen. I Haue also

^a Com. Jour. ii. 696.

^b Com. Jour. v. 503.

^c Whitelock, p. 302; Com. Jour. v. 545.

^d Clarendon, p. 645.

^e April 23.

^f A ship with a very narrow stern, having a small square part above. The shape is of old date.—Admiral W. H. Smyth's *Sailors' Word Book*, *sub voc.*

very late newes from Parris, that the Prince is sodainely to depart ffrance, but which way or wheather is not knowne. We want the Captains off the Antilope ^a Swallo ^b and John ^c exceedingly as also the Liefftenantes, there being none off these fformer wanting yet come downe. What I He[ar] ffarther you shall spedily receue from

Sir

Your very Humble and ffaithfull Seruant

THO. RAINBOROWE

ffrom on board the Reformation
in the Downes Aprill the 28th 1648
past eleuen at night.

ffor the spetiall seruice off the Parliament
To the Honorable William Lenthall Esq^r Speaker
off the Honorable House off Commons at
Westminster thes.

THO. RAINBOROWE.

Hast Hast Hast post Hast
with spede

ffrom the Reformation in the Downes April the 28th 1648, past
eleuen at night.

Receued att Deal past 12 at night

Receued at Canterbury past 3 in the morninge

Receued at Settingborn past 7 in the morninge

Rochester past tenn in the m.

Receued at dartford 2 afternoon.^d

About this time it was reported among the English royalists that the Duke of York, "formerly made admirall by the King, hath now sent to Rainsborough to be obedient to his commands," and that he had informed the sailors that if they would act on his behalf their services should be rewarded. In case Rainborowe would not break with the Parliament report ran that James intended to make Van Tromp his vice-admiral. It was furthermore rumoured that the sailors were so mutinous that Rainborowe dare not venture out to sea with them.^e

On the 12th of May the Vice-Admiral wrote to some one, probably the

^a Edward Hall; Com. Jour. v. 503.

^b Edward Popham. Ibid.

^c Edward Miott. Ibid.

^d Tanner MSS. lvii. i. 23. This letter has already been printed, with the exception of the address and curious memoranda thereon, in Cary's *Memorials of the Civil War*, i. 392, but from a transcript so corrupt as to make it worse than useless. Among the errors are "junk" for "Pinke," and "Reefer" for the name of the vessel, the Reformation, which Rainborowe has contracted thus—Refor'.

^e News-letter dated 4 May, 1648, in Clarendon State Pap. MSS. 1648, 2773.

Speaker, a letter which was laid before Parliament on the 15th, inclosing a list of the ships as they were "disposed and appointed to squadrons," and stating that he had received intelligence of two French men-of-war "ships of Diep," which were being employed to transport arms and horses into Scotland.^a Scotland was then on the eve of war with England, though open hostilities may not have commenced. It is certain that these military stores were for the service of the Duke of Hamilton, whose expedition ended so unhappily for himself and his royal master at the rout of Preston on the 17th of the following August.^b The next letter we have from Rainborowe relates to an impudent impostor, who pretended to be the Prince of Wales, and for a short time had many adherents. William Boys, the Sandwich historian, who quotes from documents in his own possession, says that his name was Cornelius Erings or Evins, that he came to the Bell Inn at Sandwich at Whitsuntide,^c "and sent for the mayor and jurats and made them believe he was Prince Charles. Peter Vanderslaet of Stanner sent him 100*l.* in gold, and Mr. Culling gave him a good gelding, but eer long he ran away like a rogue as he was."^d An unsigned news-letter among the Clarendon State Papers, dated from Deal on the 30th of May, which gives an account of some of the earlier events in the Kentish rising, states that when a body of royalists wished to enter Sandwich they found the gates shut for the purpose of guarding this mock prince. After a time these insurgents resolved to take the impostor away with them, naturally fearing that his presence would be prejudicial to their cause; this they found no easy matter, for Captain Forstall, who was an ardent believer in him, and was entertaining him in his own house, was determined to afford him protection, and we "had certainly gone together by the ears with the town (the seamen and most part of the people being enraged against us, and would not be undeceived) had not the idol escaped away over the ferry into the Isle of Thanet, where he was taken, and hath since confessed his name to be Cornelius Evans."^e When he first presented himself at Sandwich he was dressed in "an old black sute," and was altogether in a most filthy condition. He seems, however, to have succeeded in deceiving the greater part of the inhabitants. He gave it out that he was compelled to leave France on account of the persecutions he had undergone from the Queen, his mother, who had, as he said, attempted to take his life by poison. "Many gentlemen and women came daily to kisse his hand," he was attended by a guard of musketry, "trumpets sounding

^a Whitelock, p. 305; *Com. Jour.* v. 559.

^c Whit Sunday, 1648, was on the 21st of May.

^b Cromwell's Letter in Carlyle, i. 282.

^d 714.

^e ii. 407.

his meat to table most commonly, and, as some say, most nights drunk ere he was acquainted with his bed." Sir Thomas Dishington[n], a Scotch knight, who was employed as an agent of the Queen and Prince of Wales in England, came to Sandwich for the purpose of seeing him. After he had asked him some few questions he unhesitatingly denounced him as an impostor, and "call'd him villaine and counterfeit rogue; the new-coyn'd prince immediately shewes his power and commands the mayor to clap Sir Tho. up in prison for his treason," an order which was at once obeyed. Some time afterwards Evans fell into the hands of the government, and was committed to Newgate, where we lose sight of him."

Mr Speaker. the last night about 2 owers after the watch was set there Came in a great flete off ships from the westward, and in one off them the Prince off wales, Hee was in very meane apparrell, soo soone as He landed He went away, to Sandwich and now is at the Bell in that towne declaring Him selfe to be the Prince many people flock thither to Kis His Hand I dare not take time to write mor but subscribe my selfe

Your most Humble and ffaithf[ul]
servant

THO. RAINBOROWE

May the 20th 1648.

I haue sent to the magistrates off Sandw[ich]
to continue Him there till your pleasure but
what they will doe I knowe not;

ffor the Hono'ble Will Lenthall Esqr Speaker
off the Hono'ble House off Commons with all
spede

these present.^b

The fleet, though it had hitherto served the Parliament faithfully, had never imbibed the same feelings in politics or theology as the army had done. The soldiery of 1648 were almost as different in their views from the men who volunteered to fight for the "King and Parliament" under the Earl of Essex in 1642 as they were from those who had rallied round the King when he raised his standard at Nottingham. The sailors had altered but little; they were, as Clarendon says, with an unwonted touch of insight, "a nation by themselves, a humorous and fantastic people."^c They had lost their old admiral, believed

^a Matthew Carter's Relation of Expedition of Kent, Essex, and Colchester, edit. 1650, pp. 42-47.

^b Tanner MSS. lvii. i. 91.

^c p. 646.

that he had been cashiered or compelled to resign, and were now commanded by a man who, though a good sailor, was opposed to their habits of thought. Besides, the news was spreading everywhere, and had certainly reached the fleet, that the King was a prisoner, and subjected to many indignities at the hands of the triumphant Independents. Scotland was at war on his behalf with England, and the mutterings of domestic insurrection reached them from all quarters. Wales and Kent, Yorkshire and Lincolnshire, were ripe for insurrection or already in arms. Discontent was fomented in the navy as elsewhere by secret agents of the lost cause. The Parliament were in some degree aware of the state of feeling in the navy, and had only half victualled the ships.^a The extremity of their danger was communicated to them in the two following letters :

May it please your Lordships.

The present distemper off this country is such as Hath put as sad a face on things as euer England saw, and it hath begot a distemper in the flete which I am confident though some what allayed at preasent, will be off as dangerous a Consequence as any one thing besides, if this gathering be not by some means or other spedily suppress. That which is the greatest motiue to the disturbance off the seamen is that these parts are holy for the King. The Swan^b set saile yesterday being convoy to the Hopewell and one small vessell more ffor Dubling; the Satisfaction staves Here to convey the rest. wee wonder Exceedingly they come not away. The complain[ts] from the North are so exceeding great that tomorrowe (iff the men will be commanded to it) the Conuertine and Providence goe to the northward. The Weymouth Pincke is now getting saile to be conuoy to the ship Lady off London, layden with ammunition ffor weymouth and Pendennis. a line or two from your lordships at this time might be off great incouragement to many amongst vs. of all other things this bearer will giue your Lordshipes perfect account I am, and shall be to death,

Your Lordshipes most Humble and

faith[ful] Seruant

THO RAINBOROWE.

May the 24th

1648.

ffor the Right Honorable the Comitte off Lordes
and Commons ffor the Admirallty and Cinque
Portes

present.^c

^a Clarendon, p. 648.

^b Robert Clerke was commander of the Swan. *Com. Jour.* v. 503. This vessel did not revolt, for in 1653 Thomas Wilkes was her commander in the service of the Commonwealth. *Thurloe MSS.* ix. 176.

^c *Tanner MSS.* lvii. i. 100.

Mr Speaker

My last was sad this most sad. as I then tould you my ffeare, it is now come to pas that my ship, the Swallo, the Satisfaction, the Hind, the Roebuck, the Pellicann, are all declared for the King; Have imprisoned the officeres and all otheres that stooode ffor you. How I came to be at liberty, with the hole management off the busines this Gentleman can giue the sad relation. At the time Sandwich was taken by the enemy, douer castle and the three castles in the Downes were all beseged, and had I not bene (according to necessity) imployed about securing them, my ship had not beene so lost. Not aboue two oweres before, all the captains save He off the Roebucke,^a were with me at a counsell off warr, declared to liue and dye ffor your seruice, and to that purpose weyed by my order, declaring they knew not aboard any of them the least cause to suspect ther men. M^r Lisle, my Lefftenant, the chieffe actor. No officer with stooode it but the Master one Mate and two quarter masteres it's of necessity that commandes be sent to Hull, Newcastle and all other your northerne and western garrisons, that iff any off the ffilete come within there command they stop them, and to take Hede least they be betrayed by them, for there is good reason to beleue, those gone seuerall wayes will be in the same posture, so soone as they here this, it hauing been plotted beffore they departed. The Tiger^b I sent to Harwich some fflower dayes before. The Convertine and the Providence, the two ships I mistrusted, I sent the day before to the Northward. They put me aboard a small vessell bound ffor London, and knowing the Tiger was here, I got the vessell bring me here, where I also found the Providence. I interd aboard them to try if it be possible to gaine them either by faire meanes or threts. This ffort and that at Harwich being yours, though in a very inconsiderable posture to doe you seruice, ffor Weymouth and Sandowne Castles, I fear they are both lost. I being fforced ffor there security to mann them with seamen. Part of these ships men reuolted and ffor my owne, I hope that will hold out some time iff there be any Hopes off releife. I desire spedily to Here from you and (as god shall please) to liue or dy with you as

your most Humble and ffaithfull seruant

THO. RAINBOROWE

Langer ffort May the 27th 1648 past thre afternoone.

I since this send the nicodemus to deptford & desire
some means be vsed to stop Her there.

ffor the Honorable William Lenthal Esq^r Speaker
off the Honorable House of Commons these
with all spede.^c

The second of these letters is written in very confused English, much unlike Rainborowe's usual clear and businesslike style. He was no doubt in consider-

^a Robert Nixon was commander of the Roebuck on the 17th of March. *Com. Jour.* v. 504.

^b The Tiger probably did not revolt. James Peacock was her commander on 17th of March, 1648. She was in "ye river," i.e. the Thames, under the command of Gabriel Sanders, in 1653. *Thurloe MSS.* ix. 176.

^c *Tanner MSS.* lvii. i. 115.

able mental agitation, so much so indeed that if we had to depend on his letter alone we should have but a confused notion of the details of the catastrophe. The plot had been in process of concoction for some time through the agency of Major Reme,^a who had succeeded in visiting the fleet for the purpose of seducing the sailors into joining the royal party. The fleet lay at anchor in the Downs, and as soon as the sailors saw a troop of horse on the shore—which was probably a preconcerted signal—they instantly revolted and secured their commanders. Rainborowe was not on board at the time of the revolt; he had gone to Deal Castle for the purpose of defending it, or, as we may rather surmise, putting it into a state fit for defence against the Kentish insurgents. From the lead roof of the fortress he beheld a commotion in the fleet, and at once took boat and hatsened to the spot. It is said he had his wife and children with him. If it were so he probably took this precaution to hinder them from falling into the hands of the insurgents in case Deal Castle should be taken by them.^b When he reached his ship, and endeavoured to go on board, the mariners forced off the boat, and he was told by “the boatswain’s mate, a witty and bold knave, and a prime agent in the mutiny, that the case was altered, that they had concurred with the Kentish gentlemen, and that there was no admittance for him;”^c at the same time they admitted “that he had been a kind and good natur’d commander to them,” and were anxious that he should suffer no injury in person or effects. He demanded of them a pinnace for the purpose of carrying him to London, but this was refused, and he was told that a Dutch fly-boat was on shore in which he might have a passage to London for sixpence. As no better terms were to be made he at once adopted this means of conveyance, taking with him, as Carter is careful to tell us, “his wife, children, sisters, and the rest of his family.”^d The news-letter in the Clarendon State Papers gives substantially the same account, except that it tells us he made his journey in a Weymouth vessel bound for London.^e No mutiny was ever more successful, or carried out with more regard to the feelings or even comfort of the deposed Admiral. We may therefore certainly conclude that the sailors had formed a high opinion of his character.^f

Kent was now wrapped in the flames of civil war. At first Fairfax could only collect a very small force to meet the emergency; among the foot was half a regiment commanded by Admiral Rainborowe. On the 13th of June Colchester was summoned to surrender. When the siege-works were completed Rainborowe’s

^a Carter, p. 51.

^b Deal Castle did surrender very shortly afterwards. Carter, p. 66.

^c Clarendon State Pap. ii. 407.

^d p. 53.

^e ii. 407.

^f cf. Godwin’s Hist. Com. ii. 534, quoting Letter Book of both kingdoms.

command was on the north side of the town by the river-bank.^a Most of the windmills, with which the town was supplied with flour, fell into the hands of the parliamentarians at an early part of the siege. On the 5th of July Rainborowe destroyed what seems to have been their last hope, a water-mill below the north bridge. This building had a guard stationed in it for purposes of protection, but a party commanded by the Admiral himself forded the river and set it on fire, at the same time tearing up the sluice by which the head of water was formed that turned the wheel.^b Before, however, the work was fully accomplished, a party from the town sallied out and drove the besiegers away in some disorder. When the ground was clear the royalists were commanded to take water in their hats and quench the flames;^c but it would seem that the work of destruction had been sufficiently complete, for the besieged possessing some mill-stones "lying for transportation," which they had found "at the Heith by the River side," set up diverse horse mills, which proved of great use to them during the siege.^d They also constructed a rude kind of windmill on the top of the castle, but this was speedily demolished by Rainborowe's fort.^e

As August proceeded the famine in the beleaguered town became very severe. Horseflesh was eaten without scruple, and as time went on dogs became a common article of food. "I have known there six shillings given for the side of a dog, and yet but a small one neither," says Matthew Carter, who was quartermaster during the siege.^f

At length the want of food became so terrible to the inhabitants that five hundred women came out of the town toward Rainborowe's quarters. He commanded a cannon to be shot off, care being taken not to hurt them, but the poor creatures still pressed forward. Some muskets charged with powder only were then discharged; then he sent out soldiers "with orders to strip the women, which made them run, but none of them were stripped." When these unhappy sufferers returned to the town the royalist commanders refused to admit them. Fairfax remonstrated with the garrison for their wanton cruelty, but whether the women were admitted or at length received into the parliamentary quarters is not recorded.^g

On the 28th of August Colchester surrendered and Rainborowe served as one of the Commissioners on behalf of Fairfax.^h His regiment and another which

^a Markham's Fairfax, pp. 313, 316, 317.

^c Carter, p. 155; Strutt's Hist. of Colchester, ii. 210.

^e Markham's Fairfax, p. 223. ^f p. 161.

^h Articles for the Surrender of Colchester, 27 August, 1648. These are not in the original edition of Carter's Relation, but are added to the eighteenth century reprint, 8vo. n.d. Colchester: "J. Pilborough, in High Street," pp. 213-216.

^b Strutt's Hist. of Colchester, ii. 210.

^d Carter, p. 156.

^g Whitelock, p. 331.

is not named were the first to enter the town, when a sad sight presented itself, "so many fair houses burnt, and so many inhabitants sick and weak with living upon horses and dogs, and eating the very draught and grains for preservation of their lives."

At seven o'clock in the evening of the same day, Rainborowe, in company with Colonels Ireton and Whalley, witnessed the execution of the two royalist commanders, Sir Charles Lucas and Sir George Lisle, who were by sentence of court martial shot to death beneath the walls of the castle.^b

When the Kentish rising was quelled Rainborowe returned to London, and, as we gather from what followed after, resided there for some weeks. The various royalist insurrections had almost all been put down, and the more violent spirits of the party were beginning to take to those desperate and bloody courses which are so often the last resource of the less honourable members of a defeated party. On the 30th of September Colonel Rainborowe—he seems but seldom to have been spoken of by the title of admiral when not actually engaged in the sea service—was riding between London and Saint Albans, having a captain in company with him, when he was assaulted by "three of the King's party." These would-be murderers, seeing the "gallantry and resolution" of their intended victims, "put spur to their horses and rode for it, and being extraordinary well mounted overrid them," but their action was an earnest of what the independent leaders had to expect from those whose passions they had rendered ungovernable by crushing defeat. On the very same day a captain in the army and a major were attacked and both of them killed.^c

On the 3rd of June Pontefract Castle was a royal garrison. Twice before the northern royalists had gallantly held it for the King, and it had now fallen once more into their hands by the strategy of Colonel John Morris. This was not only a great loss to the parliament—for the strong fortress long known as the key of the North was a most important garrison—but the moral effect of its fall, now that England was seething with discord and ready to flash forth into armed insurrection, cannot be over estimated. The more desperate state of affairs in other parts of the country rendered it however impossible that due attention should be given to Pontefract for the present, and the consequence was that late in June a party from there, under the command of Sir Philip Monkton,^d possessed themselves of the Isle of Axholme and dashed on southward as far as

^a Whitelock, p. 333.

^b Carter, p. 197; Fairfax Correspondence, iv. 47.

^c Whitelock, p. 339; Rushworth, part iv. ii. 1279.

^d He was a devoted and distinguished royalist. Viscount Galway is his descendant and representative in the male line.

Lincoln, where they plundered the Puritans there to their hearts' content, then returning northwards crossed the Trent at Gainsburgh ferry to receive a crushing defeat from Colonel Edward Rossiter at Willoughby, near Newark.^a

Some time after, probably at the end of July, Sir Edward Rodes, of Great Houghton,^b and Sir Henry Cholmley,^c with a force which is said to have numbered five thousand men,^d laid siege to Pontefract Castle. These forces were from time to time augmented by other troops, and yet the officers in command never seem to have had sufficient men under their control to make the blockade secure. After the siege was considered to have begun in good earnest parties from the castle were in the habit of sallying forth, laying the country under heavy contribution, and sometimes even carrying off Puritans of note, whom they held till they were redeemed by large payments. One of their victims was Sir Arthur Ingram, of Temple Newsham; him they took from his own house,^e and did not set free until he had paid a ransom of fifteen hundred pounds. A nameless writer, who dates his letter from York, 28th October, 1648, gives a strange picture of the utter lawlessness of the country, and the lax state of discipline that existed among the forces under the command of Cholmley and Rodes. He says, speaking of the Pontefract garrison, that "they have, since I came from London, taken at least two hundred head of cattle, above one hundred oxen, from graziers; they sound a parly for a cessation and make a fair of their horses near the castle, sell them to Sir Henry Cholmley's troopers, and in the cessation they drink to one another, 'Here is to thee, brother Roundhead,' and 'I thank thee, brother Cavalier.'"^f Such a state of lawlessness could not

^a "An Impartiall and True Relation of the Great Victory by the Conjoynd forces of Lincoln, Nottingham under the Command of Col. Edward Rosseter," pp. 1-3. Boothroyd's Pontefract, p. 271; Whitelock, pp. 316, 318.

^b There is a notice of him in Hunter's *South Yorkshire*, ii. 131.

^c Sir Henry Cholmley, Knt. was the second son of Sir Richard Cholmley, of Whitby, Knt. by his first wife, Susanna, daughter of John Legard, of Ganton, co. York. *Yorks. Visitation, 1612*, ed. Joseph Foster, p. 220; *Charlton's Whitby*, p. 312; *Memoirs of Sir Hugh Cholmley*, ed. 1870, pp. 11-14.

^d Surtees *Misc.* quoting Paulden. There is no doubt the number of men given is far in excess of truth.

^e The late Mr. Hunter thought he was captured at Hatfield, where he had a residence (*South Yorks. i. 175*), and quotes Rushworth, part iv. ii. 1314, in proof of this. The statement Rushworth prints, though it makes it probable, does not prove that Hatfield was the place.

^f Rushworth, part iv. ii. 1294, 1314. The disorganised state of the country at this time is well illustrated by a tradition preserved in Warburton's *Collections for Yorkshire*. It is there stated that when Rainborowe was quartered at Doncaster he sent three companies "to quarter at Hatfield and Woodhouse, to preserve them in subjection, and to overawe Robin Portington, who had most commonly a troop of his own constantly in the Lordship, and who had got such a terrible name amongst the Rebels that he

be permitted to last. The exigencies of the time were, however, such that no remedy could be applied before October. Some time during that month—the day is uncertain—Rainborowe received orders from Fairfax, the Lord-General, to take the chief command of the forces besieging Pontefract Castle; he had under his command a considerable body of foot and horse.^a When he arrived at Doncaster, about twelve miles from Pontefract, it came to his knowledge that Sir Henry Cholmley objected to his taking the command. With our present notions of military discipline the difficulties raised by Cholmley seem frivolous, especially when we call to mind the very lax manner in which the siege operations were being carried on. He was, however, a scion of an illustrious family, and extremely popular in the east and north ridings; he had received his appointment from the Northern Committee, and there can be no doubt that, had he been displaced against his will, the popular feeling throughout the North of England would have been strongly in his favour. A halt at Doncaster was the consequence,^b to give time for Fairfax and the House of Commons to be consulted. Rainborowe, himself, visited York on the 17th of October, in the hope of arranging matters;^c and there cannot be much doubt that on that very day Sir Henry Cholmley wrote the following letter to the Speaker.^d The original document does not seem to have been preserved, but there is a copy of it printed in one of the newspapers of the time. In the form in which it has come down to us it is without date. It was not printed until after Rainborowe's death, when Sir Henry Cholmley's conduct had become the subject of severe censure. The copy from which we quote is so much confused by the hostile remarks of the editor, which are interspersed in the text without brackets or other marks of distinction, that the following transcript, though undoubtedly giving the sense, may not in every instance be verbally accurate.

was commonly call'd Robin the Devel, while the 3 troupes were in quarter as aboue, a poore mad woman came crying into the Town that Robin was comeing out of ye levels with a great army, and was resolved to kill every body; upon that the above sayd three troupes, being almost frightened out of their wits, mustered upon the Lings in the greatest confusion imaginable, and immediately fled, as fast as their horses could carry them, to Doncaster." *Lansd. MS. 897, fol. 207.*

^a Rushworth, part iv. ii. 1310, says he had two regiments of foot and two of horse. *The Surtees Miscellany*, p. 96, quoting Paulden, (?) says 1,200 foot and a regiment of horse.

^b Rainborowe seems to have taken up his quarters there about the 20th of October, for in the Doncaster Corporation disbursements of that date occurs the following entry: "Paide two messengers for Carringe warrants into the cuntery for quarteringe Coronel Ransbrow 1^s 2^d."

^c *Vide post*, Letter of Yorks. Committee.

^d *Com. Jour.* vi. 57; Rushworth, part iv. ii. 1300.

Sir Henry Cholmley's letter to Mr Speaker.

Sir

This day Colonel Rainsborough came hither, his Regiment being now at Doncaster, he brought an order from the Generall to Command in chief the forces here before Pontefract. Though I am not ambitious of the Honour myself, yet being by the Committee of this County chosen the Commander in chief of their forces, and not having any dependence upon the General, our Ordinance being distinct from him, and our Commissions tying us only to observe your orders, and the Committee of this County. I could not do that wrong to Sir Edward Rhodes and Colonel Maulyuerer, the late Governor of Hull, (who are both elder Colonels then Colonell Rainsborough,) to obey his Orders, till I shall first hear that it is in your pleasure to have it so, which when you shall command, we shall be ready to obey, though we may perhaps think it a hard recompence of our services. That when we engaged in the Kingdoms and our Countries greatest need, as then it was, and having now been five moneths upon the employment, and upon every other nights duty with our foot, and 50 houres together with our horse whereby we have driven the enemy, who was master of the countrey into his last strength and begun our Lines about him, wee should now have one put over us, that is but a bare Colonell of foot in the Army, and a younger Colonel than any of us. Sir, the Kingdom being now in this posture there may perhaps be little use of us, yet we are unwilling that another should reap the reward of our labours, and with double the force that we have had, come now and gain the prize for which we ventured our dearest blood. Sir, I have now laid the businesse before you, and for the preventing of any differences, or other inconveniences that may happen I desire your speedy answer.

Your Servant

HENRY CHOLMLEY.

To the Honourable William Lenthall Esq. Speaker
of the honorable house of commons.^a

Mr Speaker

It hath bene and is the vnhappinesse of this Countie to begin with the first and continue with the last of these places that drinck deepest of the miseries of the Kingdome, and what heavy burthens the being of the two Castles of Pomfrett and Scarbrough in the hands of the enemy, in these last eruptions, haue brought on this Countrie, we wish the rest of the Kingdom had a fellow feeling with it. The forces of the Militia here we must neede saie, haue discharged there duties toward the Reducement of them, however the fruit hath not bene answeareable to there or our desires. The want of foote at Pomfrett hath made the dutie of horse and foote so intollerable, they being vpon the matter on constant duety, or reserves inforced to keepe the more, and see the weaker guards for want of foote to take in the new hall, and drawe a line at a neare distance, that our horse do often fall downe vnder there Ryders and more then is done canott be well expected from them. In these respects, It was very welcome to vs to heare that his excellencie

^a The Moderate: Impartially communicating Martial Affaires to the Kingdome of England, No. 17, Oct. 31—Nov. 7, 1648.

the Lord Generall had sent Colonel Rainsbroughe's Regiment with some horse to our assistance in hopes there would haue bene care taken for there provisions otherwise then out of this poore waisted Countie. here that Regiment hath bene now these twenty daies to the great charge of the Countay, about ten miles distance from Pomfrett, But vpon Colonel Rainsbrough coming in person to vs on Teusday last we find he brings with him a Comission from the Lord Generall to Comand in cheife the forces before Pomfrett, and that vnhappily did occasion a dispute, and started the consideracion of manie inconuiences that were feard would arise, both amongst officers and souldiers in some questions of honnour. To prevent the mischeif whereof partly by mediation of this Committee, partly by the prudence and temper of the Comander Collonel Sir Henry Cholmeley (whoe hitherto by order of this board Comanded in cheife, according to his antiquitie at Pomfrett) and Collonel Rainsbrough, there was a midway, agreed vpon, and condiscended vnto (vizt) that the two Collonels respectiue should communicate Councells vpon all occasions and Comand there owne forces at there distinct posts, till the pleasure of the parliament were further knowne, both of them aimeing at the same end, the advancement of the publick service. But the next morning Collonel Rainsbrough hath bene againe with vs and acquainted vs that vpon second thoughts he canott conforme to his last nights resolution, nor go any whitt lower then according to his Comission to comand in cheife, truely Sir we are much troubled at this vnhappie emergent, and out of our honourable esteeme of the Lord Generall's orders are very tender of determining anie thing of this nature, or entring into dispute concerneing it. But doe humbly leave it to the deliberate Resolucon of the house. But in the meane time, that Regiment lyes on the charge of this Countie, and our forces like to be Rendred wholly vnserviceable by incessant duetie, and what advantage the Enemy must needs take thereby the world will easily Judge. Sir, The grounds of this poore Countie vnder there burthens double and trible to all the rest of the Kingdome Cryes alowd for your assistance, that this last worke may be don by a Comon charge and that our owne forces may not be wholly maintained by the charge of this Countie so long as the house shall thinck fitt to continue them, and when they shall conceive they haue noe further vse of them, we humbly pray there may be a seasonable care for there satisfacton, as for the rest of the souldiery of the kingdome. Sir, we humbly submitt all to the care of the honourable house and rest

Your most humble servants

EDW RODES

RO BARWICKE

FFR LASSELLES

FFRANCIS DARLEY

THO ST NICHLAS.

Yorke 20th October 1648.

ffor

The Honourable William Lenthall Esquire Speaker
of the honourable the House of Comons
these.^a

^a Tanner MSS. LVII. ii. 378.

Sir Thomas Fairfax was at this period at St. Albans. It is evident that both he and the Parliament were anxious to make matters as little distasteful as possible to Sir Henry Cholmley and the Northern Committeemen. We know that they corresponded with each other on the subject, and that Fairfax promised that he would be very tender of the honour of the Yorkshire knight.^a

But while the Lord-General and the Parliament were writing letters the desperate men in Pontefract Castle were becoming more and more daring in their raids upon the surrounding country. There seemed to be no likelihood that they should ever want provisions, for at the very time this foolish controversy was at its height the cattle of the neighbouring farmers were being driven into the castle in droves, and the beleaguered royalists had acquired an almost inexhaustible supply of salt for curing them.^b

It is, indeed, affirmed by S. T. of Wetherby, writing on the 31st of October, that the Pontefract garrison had "levyed for many weekes together the value of 3,000*l.* per mensem."^c As time went on the besieging forces seemed to be less and less careful in the observance of discipline.

Sir Henry Cholmley must have known from personal acquaintance that Fairfax was a prompt man, and he could not be blind to the fact that the full extent of the disorganization of his own forces must soon come to the Lord-General's ears. When it did so it would not be likely that a trivial matter of military precedence should stand in the way of the public service. The General's or the Parliament's orders Cholmley must obey when they arrived, and those orders would almost certainly give Rainborowe the command of all the forces beleaguering Pontefract Castle. The foolish objection that Sir Henry and the other officers with him were colonels whose commissions were of earlier date than Rainborowe's would fall to the ground, and their honour be saved in their own eyes, and, what was more important, in those of their raw levies, who were their own tenants or near neighbours, and in whose eyes for social purposes it was all important for them to stand well, if an officer of unquestionably higher rank than any of themselves could be got to come to their aid. Cromwell, who was a lieutenant-general, was somewhere in the north; Sir Henry probably did not know

^a Rushworth, part iv. ii. 1306.

^b Cromwell, writing on Nov. 15, said the fortress was victualled for a twelvemonth; that the royalists had gained "two hundred and twenty or forty fat cattle within these three weeks." Carlyle, i. 331; King's Pamp. 394, 24.

^c A full and exact relation of the Horrid murder . . . of Col. Rainsborough. 4to. London: Printed for R. A. 1648, p. 4.

exactly where. He, however, wrote a letter on or about the 16th of October begging him to come and take the command. Where the messenger found him we do not know. He was at Carlisle on the 14th of October,^a and it was probably there or in some of the passes of the lake district, or in the north riding, that the bearer of the letter fell in with him. Sir Henry Cholmley had, or professed to have, heard from Cromwell before the following letter was written. There must have been, however, some mistake or falsification, for he declares that he hopes for his arrival on the morrow—that is, Friday, the 27th of October, whereas it would appear that Cromwell did not reach Pontefract until about the 9th of November.^b

Sir

I receaved yours by this Poast & shall be very ready to obserue ye Commandes of ye howse in any thing; And soe ambitious was I to continue my command here, that aboute tenne daies before I receaved your letter I had writt to ye Lieutenant Generall to desire him to come & take ye command in this County & fower or fiue daies after, (at my entreaty) that was seconded by a letter from ye Committee of this County, for that purpose, & he will be at Pontefract tomorrowe with with (*sic*) twoe Regiments of Horse & some foote which will, I suppose ere longe bring that place to hearken to reasonable Conditions. Sir, wee heare you have ordered ye forces of this County to be disbanded.^c As we had no other end in ye taking vp of Armes but your service soe I am Confident we shall be ready (when euer you please to comand it) to lay them downe again which ye sooner itt comes itt will, I dare say, be soe much ye welcomer to very many here & especially to

Sir

Your most humble Servant

HENRY CHOLMELEY.

8^{br} ye 26th

48.

For ye Honorable William Lenthall Esquire Speaker of ye
Commons House

this /
present.

On entering Doncaster Colonel Rainborowe took up his quarters at a house in after years known as "Alderman Walker's house facing the butcher's sham-

^a Com. Jour. vi. 57; King's Pamp. 392, 19.

^b That was the day on which he summoned the Castle. Rushworth, part iv. ii. 1325.

^c Col. Rodes and Sir Henry Cholmley's regiments were disbanded early in January, 1649. Surtees Miscellany, p. 103, quoting Roundheads before Pontefract in 17th and 18th vols. of Tait's Ed. Mag.

bles."^a Walker occupied the place in 1704, but a tradition which may be traced back to an early period affirms that it was formerly the head inn in Doncaster, and that on one of his visits to Scotland Charles I. had lodged there. The house still stands, though it has been much modernized. It is situated on the north side of the market-place, just beyond the termination of Baxter Gate, and nearly opposite to the site of the old shambles and butter-cross which were removed about thirty years ago. Over the doorway which opens into the street is the date 1604.

Colonel Rainborowe was killed by a party of horsemen from Pontefract Castle at about eight o'clock in the morning, on Sunday, the 29th of October.^b There are several contemporary accounts of the transaction written by enraged Parliamentarians and Independents, none of whom seem actually to have been eye-witnesses of the event. There is also a royalist version of the story written by Thomas Paulden, one of the actors in the tragedy; but this, though the work of one who was a witness of all and took part in much he relates, is probably not entirely trustworthy. It was not published till the beginning of the eighteenth century; and the author's object in writing it was evidently to show to the world that Rainborowe's slaughter was not a criminal action but a brave enterprise. As well as these, Doctor Nathaniel Johnstone, the antiquary, has left memoranda on the subject which were written within twenty or thirty years of the murder. It is impossible to make the differing versions tally in some important respects. Thus much, however, seems quite certain. To Captain William Paulden, a Wakefield man, who was then serving as a volunteer in the castle, was due the discredit of devising the scheme. His brother most distinctly asserts that the design, as first concocted, did not include homicide. What they meant to do was to carry off Rainborowe to the castle, and hold him to ransom in exchange for Sir Marmaduke Langdale, who was then a prisoner in Nottingham Castle, and who they feared was about to share the fate of Lucas and Lisle.^c

Had they been successful, though they might, by possessing so important a

^a Manuscript note made by Alderman Rayney (born 1667, died 1731), in his copy of *Clarendon*, published in 1707, now in the possession of Charles Jackson, Esq. of Doncaster.

^b From a letter written by John Wandesford, probably to Hyde, dated 18 Nov. 1648, it seems that the first intelligence of the murder received by the foreign exiles was to the effect that Rainborowe had been killed by a party "of the horse which formerly layd before Pontefract," that is, members of the Parliamentary forces under the command of Cholmley and Rodes. The information reached Amsterdam by a vessel which "departed from Hull vpon Thursday last." *Clarendon MSS.* 1648, 2917.

^c Paulden.

prisoner, have gained better terms for themselves, Sir Marmaduke Langdale would have been in no way served by it, as he escaped from confinement and went over sea at about the same time.^a On the other hand, the Puritan writers are all agreed that the design included bloodshed from the beginning. At midnight, on Friday, the 27th of October, Captain William Paulden chose twenty-two men in whom he could put confidence, and, escaping from Pontefract Castle through the very loose guard that the besieging force was in the habit of keeping, passed southward undiscovered. In the early morning the party arrived at Mexborough, about four miles from Doncaster. There they rested for a time, and, crossing the river, went to Coningsburgh and the hamlet of Butterbusk, where they committed some depredations;^b from whence they sent a spy to Doncaster, to ascertain that all was safe. In the seventeenth century the river valley and much of the higher ground in that neighbourhood were clothed with wood, and the horsemen would have no difficulty in concealing themselves from observation for the night. The next morning, at about half-past seven o'clock, they arrived near Doncaster, and met a friend from the town walking with a Bible in his hand.^c This was a signal that their spy of the night before had arranged should be given to them if all was quiet.^d The adventurers at once presented themselves before the main guard, which must have been stationed at the further end of Saint Sepulchre's Gate. When asked by the sentinel who they were, they "made answer the were Col. White's^e men and came to bring a letter from L. Gen. Cromwell to Col. Rainsborough, he beleevving, they soon secured him. The Captain of the Guard one John Smith being Captain Lieutenant, instead of being at his duty, being all night at a whore-house in the Toune, whose husband was a main actor."^f The

^a Clarendon, 370.

^b Rayney's annotated Clarendon, and Hunter's Notes from Nathaniel Johnston's MSS. in his own copy of the South Yorkshire, in the possession of the Rev. John Edward Jackson.

^c Their spy was to meet them at sunrise. On the 29th of October, 1648, o.s. at Doncaster, the centre of the sun's disc would be on the horizon at 7 h. 17 m. A.M. The sun would almost certainly not seem to rise quite so early as this, on account of the fog, which almost always obscures its rising in those parts in the autumn.

^d Paulden.

^e Col. Hacker's and Col. White's regiments were lying at Rotherham. Hunter's MS. note, quoting Johnston's MSS.

^f A letter from Doncaster in *Packets of Letters from Scotland and the North Parts of England*. 4to. London: Printed by Robert Ibbitson, in Smithfield, 1648. Much suspicion fell on Smith, and, in consequence, he published a pamphlet exculpating himself, entitled "The Innocent Cleared, or the Vindication of Captaine John Smith . . ." It is dated Amsterdam, Nov. 13, 1648. He admits that it was his duty to be on guard, but "was very ill, as many of the severall guards can testify," and he was therefore per-

whole party, or a portion of it only, for here accounts are directly contradictory, went at once to Rainborowe's lodgings. There, according to Paulden, they met the colonel's lieutenant, who conducted them to Rainborowe's bedchamber. Whether he was murdered in cold blood in his own room out of revenge for the execution of Lucas and Lisle, or whether an attempt was really made to carry him off as a prisoner of war, which, proving impracticable, the surprise party revenged themselves for their ill success by murdering him, will probably for ever remain uncertain. The accounts published at the time are well-nigh unanimous in affirming that he was at once slaughtered in his bedroom. "They were no sooner gotten in, but they in a sordid manner stabbed him, dragged him to the chamber doore, cut his throat, turn'd him down staires and escaped,"^a are the words of one who, though he was evidently not an eye-witness of the deed, was probably in Doncaster at the time, and heard the details of the tragedy before they had time to suffer much distortion from popular rumours.

There is, however, one contemporary notice which confirms the account given by Paulden;^b of Clarendon's account of the transaction no notice need be taken. It is so full of blunders^c where we can test it that we can have no confidence in the other parts of the story. As was his practice, he gives no information as to whence he derived his account of the tragedy. He seems, however, to have approved of the action, as he calls the Pontefract raiders a "gallant party," and what they did a "noble attempt."^d Captain Thomas

snaded to sit by a fire. The house he went into was an inn called the Hinde, and he was not aware that it was a house of evil fame. He says that his enemies have caused "ballads and songs to be made" concerning him, "and sung up and down London Streets," and adds that many people of note will give him a good character, among whom are "My Lord Roberts, who is neer of kin to me," Sir Edward Hungerford, and Col. Ludlow.

^a Letter from J. Barnard, dated Doncaster, Oct. 30, in *A Full and Exact Relation of the Horrid Murder . . . of Col. Rainsborough*. London: Printed for R. A. 1648. 4to. Cf. *His Majesties Declaration . . . Also bloody news from the army, the executing of Col. Rainsborough by the King's Party . . .* London: Printed for Robert Wilkinson. 1648. 4to. *The Kingdomes Weekly Intelligencer*, Oct. 31—Nov. 7, 1648. *Mercurius Militaris*, Oct. 31—Nov. 8, 1648. *Mercurius Melancholicus*, Nov. 14-21, 1648.

^b *Moderate Intelligencer*, Oct. 26—Nov. 2, 1648.

^c e.g. he says Morris was the leader of the party, and that the attack took place "in the end of August," p. 669.

^d When the tragedy was yet fresh in men's minds some, at least, of the King's party admitted that murder, not capture, was the design of the Pontefract horsemen. It is but justice to add that they condemned the action. "I allow not but utterly condemne the fact of those rash gentlemen; who dismissed his

Paulden's account is worthy of much more consideration. He was the brother of William Paulden, the man who devised the scheme, and formed one of the little band of horsemen who carried it into execution. He was alive in 1702, when his narrative of the events was published. As we have said, there is an evident endeavour in all he says to make what took place seem as little like a murder as possible. The old man's memory too must have been failing him, for he says that Rainborowe was killed in "the beginning of March."^a Such a mistake as this cannot have been a wilful falsification. He informs us that four men went to Rainborowe's lodging pretending to bring letters from Cromwell. This assertion is borne out by some of the other accounts, and the probability of its truth is made very strong by the fact that the woman in charge of the house at the time in after days told Dr. Nathaniel Johnston, the antiquary, that the day before Rainborowe's death Mr. Mawood, the owner of the house, asked him "if he would dine at home the next day; and he answered that he expected orders, and was uncertain."^b Rainborowe's lieutenant met the bearers of these false dispatches at the door, and conducted them into his chamber. Upon entering they gave Rainborowe a packet of blank paper, and while he was opening it told him that he was their prisoner, "but that not a hair of his head should be touched if he would go quietly with them." They had an empty horse at the door upon which they ordered him to mount; at first, we are told, he seemed willing to do so, and even put his foot in the stirrup, "but looking about him and seeing none but four of his enemies, and his lieutenant and sentinel, whom they had not disarmed, standing by him, he pulled his foot out of the stirrup, and cried, Arms, arms! Upon this one of our men letting his pistol and sword fall, because he would not kill him, caught hold of him, and they grappling together, both fell down in the street. Then General Rainsborough's lieutenant^c catching our man's pistol that was fallen, Captain Paulden's lieutenant, who was on horseback, dismounts and runs him through the body, as he was cocking the pistol. Another of our men run General Rainsborough into the neck as he was struggling with him that had caught hold of him; yet the General got upon his

soule with their ponyards, shedding the blood of warre under the pretense of peace." *Mercurius Melancholicus*, Nov. 14-21, 1648.

^a p. 6.

^b Hunter's Notes from Johnston's MSS. in his annotated South Yorkshire.

^c This was William Rasine, a younger son of George Rasine, of Pontefract. Hunter's Famil. Minor. Gent. Add. MSS. 24,458.

legs with our man's sword in his hand ; but Captain Paulden's lieutenant ran him through the body, upon which he fell down dead."^a

This royalist account tallies in several of its more important details with the statements made in *A Letter from Doncaster*,^b which is unhappily anonymous, but was evidently written by one who had taken pains to arrive at the truth. He says, that the sentinel who guarded Rainborowe's lodgings, being deceived by the pretended letter from Cromwell, suffered two of the Cavaliers to enter with pistols in their hands ; by this he means that they entered not the house itself but the internal court, which yet exists. When they got there they found the door of the house "had been left open by a mayd that went a little before out, [and] they went directly to his chamber, it being only latched, suddenly seized on him in his bed, so as he had no opportunity to draw his sword, or use a pistoll, both which were neer him. They by force led him down stairs, swearing, damme them, they would pistoll him if he spoke a word. Coming down into the hall, of a sudden he cast them both off from him, saying, ' Now, gentlemen, what is your businesse,' but they presently seized on him, having nothing to rescue himself, and there being none in the room but a maid servant of the house ; being brought out they bid him horse, but he answered he would die in the place, rather than go with them ; it is thought being confident of rescue from his maine guard. They attempted by force to have horsed him, but he striving they ran him through the body. He then called to his sentry to stand by him, but he answered he had no match ; he desired them to give him a sword that he might die like a man, but one run him again through the belly ; he boldly with both hands pulled the sword out of his body, bending the point back almost to the hilt, indeavouring to have forst it from him, with which they cried pistol the rogue, but that failing to go off one threw his pistol violently at him, bruised his forehead very much, and made him stagger. Being againe run through the body [he] fell, having before flung one of them upon the ground. They rid away from him, he got up and followed them for some twelve yards, which they seeing swore the dog was following them, and returned again upon him, but with faintnesse he was fallen before they came back, yet they ran him some eight times throw the body. The last words the maid of the house heard him say before he fell was, that he was betrayed, oh ! he was betrayed. In all this while not any appearing in the street, either for his rescue or [to] revenge him on them, not

^a Paulden's Som. Tra. vii. 7.

^b Packets of Letters from Scotland and the North Parts of England . . . 1648, 4to. pp. 4-6.

so much as a musket shot off, or an alarm by a drum, though his struggling with them was above a quarter of an hour."

The late Mr. Hunter, quoting from the MSS. of Nathaniel Johnston, concurs with the above anonymous writer in saying that only two of the royalists entered Rainborowe's bedroom. These were "Cornet Blackburn^a and Marmaduke Greenfield." Finding him asleep they woke him and asked him if he would have quarter. He yielded but afterwards resisted, and Greenfield wounded him in the thigh. "Then came Alan Austerwick,^b Mr. Charles Dalison,^c and Mr. Saltonstal, and they slew him with several wounds."

After the deed was done the party from Pontefract marched northwards over the bridge and regained the fortress in safety. Not one of them seems to have suffered any injury, and they took no prisoners.^d

No sooner did the news reach Westminster than Parliament sent instructions to Cromwell to make forthwith "a strict and exact scrutiny of the manner of the horrible murder of Colonel Rainborow, and to certify the same to the House."^e And on the 13th of November Fairfax wrote to the Speaker inclosing

^a Cornet Michael Blackburn was hanged at York 23rd August, 1649. Lloyd in his *Memoirs* speaks of his "7 years faithful service to his Sovereign," p. 563, *State Trials*. In the *Famous Tragedy of Charles I.* a play, two editions of which were printed in 1649 and another in 1709, Rainborowe's death is travestied, and Blackburn is represented as the actual perpetrator of the deed.

^b The proper spelling is Austwick. His father, Thomas, was mayor of Pontefract on two occasions. Alan was a lieutenant of horse in the royal service. He was excepted from mercy on the surrender of Pontefract Castle, but made his escape. He died in 1665. Dugdale's *Visit. Ebor.* (Surtees Soc.), p. 23.

^c This is probably a mistake for Sir Charles Dallison. He was third son of Sir Thomas Dallison, of Greetwell, co. Lincoln, Knt. by Anne, dau. of Humfrey Littlebury, of Stainsby, in the same county; recorder of Lincoln Jan. 1637; knighted at Lincoln 15 July, 1642; colonel of a regiment of horse in the King's army; serjeant-at-law 1664; died at his house in Bloomsbury, co. Middlesex, 12 January, 1669. His wife was Elizabeth, daughter and coheirress of Robert Smith, of Lincoln, "attorney-general" to that city. Information furnished by Arthur Larken, Esq.

^d Paulden, p. 7.

^e *Com. Jour.* vi. 69; *Mercurius Eleuticus*, Nov. 1-8, 1648. There seems no ground whatever for thinking that the Parliamentary authorities were not active in their endeavours to punish the murderers. A violent party pamphlet of the time, in the Forster Collection at South Kensington, entitled "To the Supreme Authority in England . . . The sad representation of the uncertain and dangerous condition of the Commonwealth," indeed, states that "his brother receives no furtherance but rather all discouragement that may be in searching after and prosecuting the causers of that so bloody and inhumane a butchery;" but there is every reason for believing that this assertion is based upon nothing more trustworthy than fierce party hatred. It seems to be the production of some extreme person of the levelling faction.

a petition from Rainborowe's widow relating to the expenses which he had incurred in the public service. He concludes by saying that "If the gallantry and faithfullness of that gentleman in his service to this kingdome were not fully knowne to every one I should speake more particularly of him."^a

The corpse was removed to Wapping, which seems to have been the family burial-place. It was arranged that at 10 o'clock in the morning of Tuesday, the 14th of November, Major William Rainborowe, his brother, "with other of his kindred," should meet the body at Tottenham High Cross, and "all the well affected in London and parts adjacent" were requested to join in the funeral procession.^b

The London Independents were not backward in showing the last marks of respect to one whom they regarded as a martyr who had died for their cause. He was accompanied to his grave "by 50 odde coaches"^c and "neer 1,500 horse."^d

Rainborowe left no will. His wife Margaret administered to his effects on the 24th of November, 1648.^e

Several elegies and odes to his memory exist in the form of broadsides, but they are worthless as verse, and of little historical value. One, a royalist production, occurs in the *Mercurius Melancholicus*, which is more shocking than any other relic of the party feeling of the time with which we are acquainted. It describes with horrible minuteness the imagined sufferings of Rainborowe in the next world, and ends by saying

" While unto Charles his crown is given
And he when dead convey'd to heauen,
Looking down thence shall laugh to see
Rainsborough howle in misery."^f

As late as 1688 his name remained in the popular memory as a leader of the Independents, for in *Poor Robin's Almanack* for that year there occurs a parody on the Church Calendar, in which the names of the regicides and other persons

^a Tanner MSS. LVII. ii. 411.

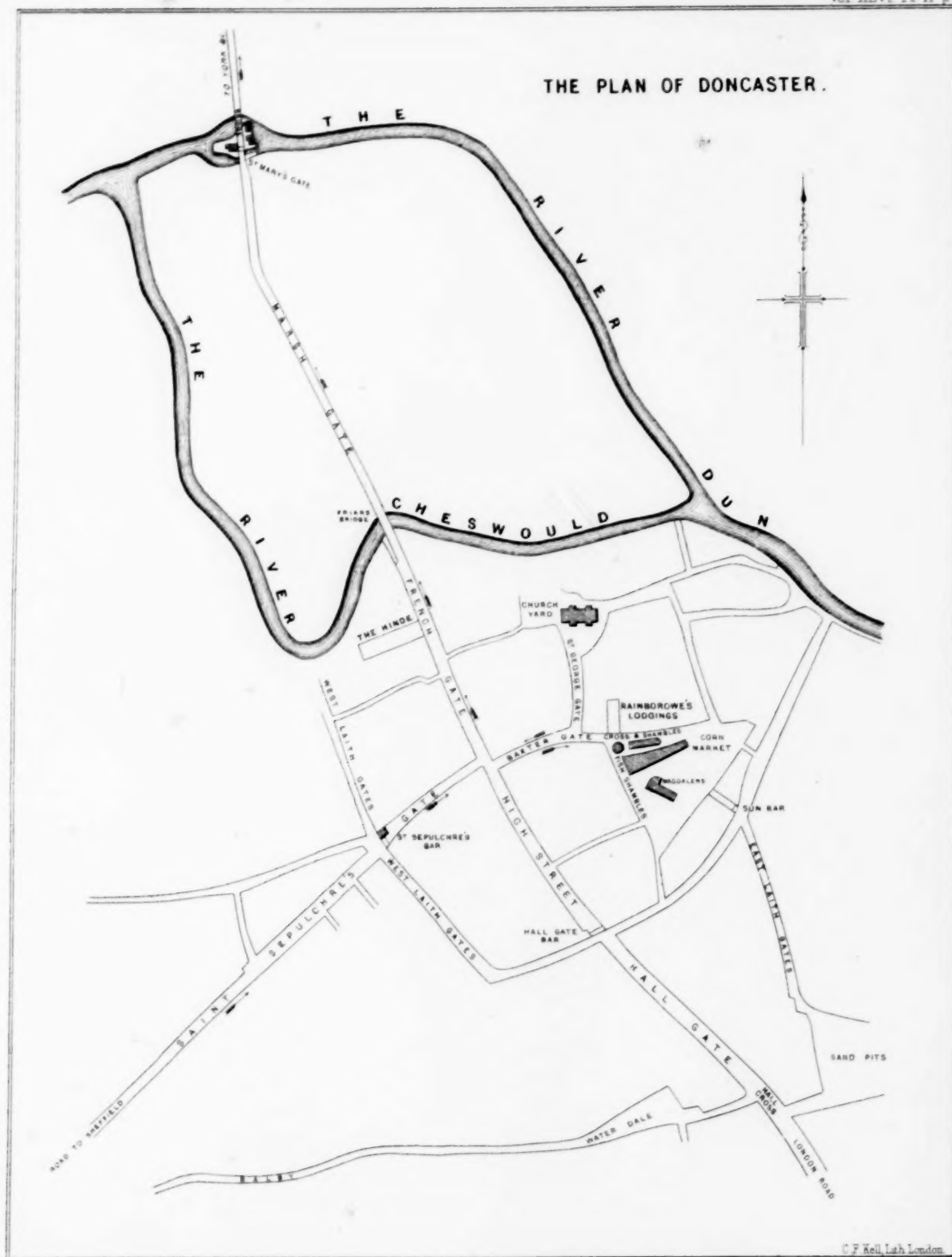
^b The Moderate, Oct. 31—Nov. 7, 1648; *Mercurius Militaris*, Oct. 31—Nov. 8, 1648.

^c *Mercurius Impartialis*, Dec. 5-12, 1648.

^d Moderate Intelligencer, Nov. 4-16, 1648.

^e Adm. Books Reg. of Prerog. Court of Canterbury, fol. 135b.

^f Nov. 14-21, 1648.



who were thought to have shared their opinions are printed in red letters. Rainborowe's name occurs under the 3rd of October.

Margaret Rainborowe, the widow, had 200*l.* per annum settled upon her until an Act should be passed for settling lands upon her and William Rainborowe her son.^a We can find no record of such an Act having passed, and the pension would, no doubt, cease at the Restoration.

It may be proper to mention that in much of the royalist literature of the time,^b and in modern writings which reflect its tone, Rainborowe is spoken of as a leveller. Nothing can be more unjust, if we understand leveller to mean what it did mean in the time of the Civil War and the Commonwealth, that is, a person like Everard and Winstanly, who held doctrines not widely different from those of modern socialists, and who put them into practice by threatening to pull down inclosures, and by actually digging the ground on Saint Margaret's Hill and Saint George's Hill in Surrey, and "sowing it with roots and beans."^c The more extreme of the Independents, especially those who were thought to be in favour of putting the King on his trial, were frequently called levellers by those of the opposite party, not because they held true levelling doctrines, but because their adversaries thought that the opinions which they really did hold would, if pushed to their legitimate conclusion, lead to actions of the same character as those advocated by the true levellers. In times when public feeling is deeply stirred a similar misuse of political terms is always common.

My thanks are due to Colonel Chester, Dr. M. F. A. G. Campbell, Charles Jackson, Esq., Arthur Larken, Esq. Portcullis, and to John Skyes, Esq., M.D., F.S.A., for answering numerous questions, and for consulting documents to which I had not access. The plan in the accompanying plate (Plate II.) is based upon the oldest plan of Doncaster known to exist, a tracing of which was taken for me from the original belonging to the Corporation by Thomas Anelay, Esq. I have indicated upon it by arrows the roads by which the party from Pontefract came to and departed from the house where Rainborowe was murdered. The site of the Hind Inn is also shown.

^a Com. Jour. vi. 429.

^b Somers' Tracts, vii. 65; *Mercurius Melancholicus*, Oct. 30—Nov. 6, 1647; Nov. 14-21, 1648.

^c Whitelock, pp. 396, 397.

APPENDIX A.

[Clarendon MSS. 1646, 2193.]

Instructions for our right trusty and right welbeloued Cosens & Councillors
Mo. E. of Lindsey, Lo. Great Chamberlaine of England and Thomas
Ea. of Southampton and our trusty & welbeloued Seruants Sir William
Fleetewood Knt. Gent. of our Privy Chamber and John Ashbourneham
Esq. one of the Grooms of our Bedchamber and to any three or more of
them.

Hauing an earnest desire to goe to our Parliament at Westminster, to advise and treat with them, for the putting an end to the miseries of this our Kingdome, and for making a speedy, happy, and well grownded Peace, We doe hereby command and authorise you to imploy your industry & endeavours to treat & agree with Col. Tho. Raynsborrow, and such other officers of the Parliament forces as he shall desire, for the safe conducting Our Person (and such of Our Meniall servants as We shall thinke fitt to carry with Vs) to London; and to protect Vs & them vntill such time, as We shall receiue from Our two Houses of Parliament assurance of being by them protected in Our honor, Person & Estate, according to the duty of their allegiance. And that our friends and servants, who haue adhered vnto Vs shall haue the like Conditions, as were by Sir Thomas Fairfax allowed and granted to those of Our party in Our City of Exiter.

And in case Our two Houses shall refuse so to doe that then the said Coll. Raynsborrow and other persons with whom you shall treat shall engage themselves to defend & protect Vs & Our said Servants with their liues and fortunes. For which this shalbe your sufficient warrant. Giuen at Our Court at Oxon. the 25th of Aprill 1646.

The following account of the taking of Pontefract Castle and the death of Rainborowe is in the handwriting of Thomas Paulden. It contains more information than, and differs in important respects from, the narrative published by him and reprinted in the Somers' Tracts. As it is not signed its authorship has hitherto not been suspected. Internal evidence proves that it is by one of

William Paulden's brothers. A receipt signed by Thomas Paulden, *Clar. State Pap.* ii. 168, No. 940, leaves no doubt on the matter. The hand in which the two documents are written is certainly the same :

[Clarendon MSS. 1648, 2978.]

After the first warre in a manner was ended, and his late Majestie was come to the Scotts, then before Newarke, and it was hoped they would haue declared for him, my brother had some meetings with C. Morris (a Confident of Overton's then gouernor of Pomfret Castle) with whom he had formerly contracted an acquaintance whilst hee had serued against the King in the siege of Sandall,^a and had some assurance of his good affections to his Majestie from his zealous protestations to that purpose, as also some good offices he had done vs in that siege; and finding him very ready to entertaine any proposall whereby hee might advance his reputation with the King & his party, which hee had deservedly lost by some late actions, hee propounded the surprise of Pomfrett as a thing faisible to him by reason of his intimacy with Overton & a seruice considerable to his Majestie, if the Scotts should then declare, as many did beleue they would, which proposition hee chearfully embraced, and promised that hee would open a Sally-Port whensoever the King should thinke it convenient for his seruice, & my brother promised to prepare what number of men might bee necessary for that designe. But the Scotts crossing our expectation & deliuering the King, made that attempt vnseasonable, till such time as Duke Hamiltons designe was in some readynesse, & Sir Marmaduke Langdale was dispatched into Scotland to commaund such English as should repayre thither, but soone after Col. Overton^b was remooved from Pomfrett, to be gouernour of Hull, and Major Cotterell made gouernour of Pomfrett, with whom Morris had little or no acquaintance, nor any such trust as might render him vsefull in that designe of opening a Sally-Port; therefore wee was than to thinke of some other way to bring the businesse about, & as it was not long before wee made an acquaintance with some in the Castle who had formerly serued the King, and were then compelled to serue the Parliament, for protection from some that persecuted them for actions done in the warre.

It was (¹) two of these persons only with whom wee treated, who assured vs that they knew fife more within the Castle who were very ready to hazard their liues to serue the King. So the designe was form'd, that a ladder should bee made and the place of the wall assigned where the corporall that was our friend should sett a sentinell that was true to vs, at the night and houre appointed: And so accordingly (hauing receiued a Command from Sir Marmaduke Langdale to do it as soon as wee could) wee prepared ourselues, and the night appointed randeuoused in a wood, some fife miles from the Castle, some threescore horse & 100 foote, resolving if the surprise succeeded to march immediately to Wakefield, to take a troope of horse of the enemy which was then all the horse the Parliament had in the county. To this purpose wee marched towards the Castle about 8 a clock or nine, in the euening, being then the latter end of May or beginning of June &

^a Sandal Castle was surrendered to the Parliament early in October 1645. *Memorable Dayes and Workes of God*, p. 6.

^b Robert Overton, of Easington Hall, in Holderness.

came to the place of the wall appointed, about breake of day with our Ladder, & calling softly to the sentinell, wee found ourselues answered by another then wee expected, who gaue the alarum to the garrison, & before wee could reare our Ladder wee saw the Governour & soldiers vpon the wall. It being by this time growne a little light, they begunne to fire their musketts & wee to runne away, leauing our ladder which was very heavy behind us. Wee imagined then that wee had beene betrayed by some within, but afterwards wee learned that this was occasioned by our Corporall's falling drunke in the euening and another Corporall's being putt on the guard, & consequently another sentinell then ours. The foot dispersed & shifted for themselues, & the horse marched some 7 miles together & the most of them, thinking it in vaine to xpect a second opportunity, marched presently for the North, to Sir Marmaduke Langdale & came safe thither. Col. Morris my Brother & some 13 or 14 more gott into a wood where they hoped to be secure till they could know where the mistake was, and to that purpose we sent a spy to Pomfrett who brought vs backe worde the same day that no man was taken, nor any one either within or without the castle discouered, that the corporall was very sensible of his error in being drunke & designed to redeeme it by eny hazard wee pleased to putt him vpon. This encouraged vs to resolute vpon a second attempt, & C. Morris, to that purpose, rid presently to the Castle with other two⁽²⁾ which belonged to the garrison, who had beene without with vs, who pretended they had beene in the country & had heard that there was some plott against the Castle & therefore had made what hast they could to their garrison. This the Governor lookt vpon as a piece of diligence he ought to thanke them for & told them that hereafter he would haue all his garrison ly within the castle (whereas before they onely lodged within the castle that were vpon the watch, & the rest lay in the towne) & in order to it he issued out warrants presently into the Country to commaund them to bring in bedds for a hundred soldiers. This opportunity of bringing in bedds wee thought might serue vs & accordingly it was ordered that on the Saturday fortnight following (which was the time limited for some townes to bring in bedds) wee should try what could bee done for the gaining of the place, & therefore desired them within so to order their businesse that all our friends might bee upon the guard that night. So the day being come Col. Morris went with four men carrying a bed, my brother with other fowre & three others, as from another towne come to compownd for theirs. C. Morris & my Brother had swords, the rest onely daggers and Pockett pistolls. Vpon their appearance at the gates & saying they had brought bedds, according to the warrants sent them, the draw-bridge was lett downe by their friends and they entred to the 2^d gate, which likewise hauing the wickett opened by the sentinell they entered to the maine guard, & there threw down their bedds to rest them & Morris, throwing out a crowne to the soldiers desired foure or fiue of them to goe fetch ale for the rest to drinke his health & they being gone out all presently draw their pistolls & askes the rest of the guard if they would haue quarter & told them the Castle was for the King which they hearing accepted quarter & rendered themselues prisoners without further resistance, & so were put in hold. The Gouvernor was newly gone to ly downe to repose himselfe. My brother went to his chamber (whilest the rest, some of them guarded the prisoners, others the gate & others went vpon the walls to secure the sentinells there who yet knew nothing of what was done below) & found him asleepe vpon his bed & waked him, told him the Castle was taken for the King & offered him quarter, but he replied nothing,

but raising himself vpp, takes his rapier which lay drawne by his side & makes a passe, & my Brother vpon it shootes him into the thigh & offered him quarter againe, which he refused, still fighting till hee had receiued three or foure wounds more, & contracting all his strength & making a violent passe hitti vpon the Bed stocke with his rapier & breaks it in three or foure pieces & being faint with losse of blood, falls downe & askes quarter which hee had, & afterwards was recouered of his wounds. This was all the blood that was spilt in recouery of that place which being mastered by only eleuen, they immediately dispatched a messenger to two & twenty horse which was in a wood some fiue miles distant, to come away immediately into the Castle, which accordingly they did & entered priuately into the Castle, so that yet nothing was knowne in the towne of the surprise.

And now it was to bee considered whether wee should with those twenty horse adventure to surprize three troopes of horse which then quartered in security at Knottingley, three miles of, & had then horses at grasse, which made it more faisible, or else fetch in provision out of the towne, it being then the height of the markett which was kept that day & it was thought more necessary to gett in provision and men, which wee might doe both sufficiently in an houre or two, to keepe it 3 monneths & it was vrged that if wee Should attempt the quarter at Knottingley & fayle wee should very probably loose the castle againe within 3 or 4 dayes. So that it was resolved wee should goe into the towne & declare the castle to be for the King, which wee did, & in an houre's time had about 100 men in the castle whom wee knew faithfull & provisions for three monneths. This was in the latter end of June or the beginning of July. The three troopes which was then all the horse that were in the County, being all armed marched away towards Yorke where they mett Lambert who then commanded in chiefe in the North. Hee marches backe with them to Ferri-briggs & there sends a Trompetter to the Governor C. Morris to demand by what authority hee had seized on the castle & for whom hee kept it, offering indemnity to all if they would deliuer it into his hands, but it was answered that hee had commission from his highnesse the Prince of Wales & kept it for the King. Some two dayes after, these three troopes faced the Castle, with whom wee had some skirmishing, being then encreased to the number of nigh vpon 80 horse, & great numbers of foote came in euery day to offer their service, many off whom we turn'd back because wee could not tell how to arme them, nor how to quarter them in any place in security; but in a monneths time or lesse wee had encreased our number to about 300 horse & 7 or 800 foot, seuerall Gentlemen of condicion comeing out of Nottinghamshire & Lincolnshire to vs, as Sir Rich. Byron, Col. Michael Stanhop, and out of other parts of Yorkshire, as Sir Philip Monckton the two Col. Portingtons & others. & now the Enemy begunne to bestirre themselues & raise forces, as Sir Henry Cholmeley to leuy a regiment of horse & Sir Ed. Rhodes another, Col. Fairfax, a regiment of foote & Bright another and Bethel & others begunne to raise forces in the East Riding, Rosseiter & White in Lincolnshire & Nottinghamshire, though all of them had obliged themselues to the contrary, as much as words & oathes could doe, & not onely so, but had promised to raise men for the King when they should see any visible force to secure them. & I beleeeve at that time when they promised, they really intended to performe it, but I am confident the designe was new formed about & they was to receiue commissions from the Parliament, and not subordinate to Cromwell's, but in the meane time to suppress the King's

party & afterwards if Cromwell had bene beaten to haue joyned with Hamilton. The reasons that make mee beleue this are not onely drawne from their oathes & promises, which they gaue seuerally to those that treated with them, but also their refusing to march with Cromwell to that battle which must necessarily decide ye businesse of the Kingdom, and when they was able to haue brought him 5,000 horse and foote to haue joyned with him which was almost as many as hee had when he fought, yet they refused & busied themselues in the siege of a small castle of very inconsiderable consequence, in comparison of winning or loosing that day which was likely to put an end to the warre. This induces mee to beleue that they did not wish very good successe to Cromwell & his army, & I am confirmed the more in in it when I consider the astonishment they was all in when they heard the newes of Hamilton's defeate.^a But to returne to the disposall of our small forces at Pomfrett which amounted, about the beginning of August, to nigh 400 horse & 800 foote whereof 300 horse⁽³⁾ marched away to Doncaster (Sir Hen. Cholmley Sir Ed. Rhodes & C. Fairfax being then at Leedes with a more considerable force) to quarter there, the towne of Pomfrett being almost eaten vpp & wee so straitened that the foote were ready to mutiny for want of meat. They had not quartered aboue 4 or fiae dayes at Doncaster, but they was invited to march into Lincolnshire with promises of great numbers of horse that would come into them & that Boston should bee deliuered to them & that one gentleman⁽⁴⁾ was ready to march to meete them with 500 horse; but none of these promises was made good, onely they tooke Lincolne, where there quartered a troope of horse & a company of foot of ye enemy, where they gott some armes. vpon their advance into Lincolneshire the enemy marches from Leedes to Ferri-briggs & there leaue some 500 foote & two troopes of horse & march with the rest (which was 500 horse & 300 dragoones) after ours into Lincolneshire. This we gaue them intelligence of & they considering that it would be very hard for them to march away & not fight either Rossiter & White who was 600 horse, or else Cholmeley & Rhodes which were a greater force & some of Rossiters van-guard appearing, they resolved to fight Rossiter & White before the Yorke-shire forces ioyned with them, which they had intelligence they would doe within fiae or 6 houres, & therefore drew vp resolving to expect Rossiter, who presently appeared, & within halfe an houre after engaged each other, where it was very handsomely disputed on both sides, but ours being ouer numbered, being not aboue 400 horse & the enemy aboue 600, at last were putt to the worse & almost all killed or taken prisoners. I doe beleue there was not 20 escaped of the field. I haue heard some impute the losse of the day to our want of colours, being thereby incapable of rallying when they were dispersed in the charge, as the enemy likewise was rather more then lesse, but they rallying to their colours & wee mistaking the enemy for our owne party, were taken by small numbers. I haue heard the enemy confesse they had more men killed then wee. Wee had no better fortune about the same time at Ferri-briggs which we resolved to storme, when they march't into Lincolneshire with most of their strength. To that purpose a councill of warre was called in the Euening & there resolved that in the morning by breake of day wee should fall vpon it, but before the councill was risen there comes two or three men one after another & brought vs word that they was marching away towards Yorke, vpon this there was shuffled vpp

^a Battle of Preston, 17 August, 1648.

an order to march presently with our horse & foote & fall vpon their reare which accordingly wee did immediately, but found them not quitting the towne but in a posture ready to receiue vs & now we was at a stand what to doe, hauing no guide provided who knew the avenues of the towne, nor no body that would vndertake to giue vs orders. Yet in a confusion we diuided our selues into seuerall bodyes & attempted to breake into their barricades, but was repulst with the losse of about 100 men killed ⁽⁵⁾ & others wounded. But some 4 or five days [afterwards] wee recovered some part of our reputacon at a passe called Olerton Boate,^a where wee fell vpon two of the enemies troopes which was off Generall Fairfax his life guard, who was accounted the best horse in the army & had the boast neuer to haue bene beaten. Our numbers & theirs were neere vpon an equall and the dispute was very sharpe, they worsting vs in the two first charges, but in the third we broake them, routed them, killed, tooke & drowned most of them, tooke both their colours, wounded Browne who commanded them very desperately in the body. Sir Richard Byron commanded the Reformadoes in this action & my brother the rest.

Five or 6 dayes after this Cromwell marched downe through Nottinghamshire into the North, where C. White joined with him & marched with him to Pomfrett, where hee entered the towne and plundered it & then marched northward. C. White, ye Nottinghamshire, and some part of the Yorke-shire forces accompanying him one dayes march & then tooke their leaue & returned towards Pomfrett, diuiding themselves into three bodyes, & quartered one at Ackworth,⁽⁶⁾ another at Fetherstone,⁽⁷⁾ ye 3d at Ferribriggs⁽⁸⁾ within two miles on euery side. About a week after wee heard of Hamilton's defeat & after wee heard that it was so cleare a victory that Hamilton had surrendered himselfe & all hee had left to Lambert at Tossiter.^b Then we beginne to thinke what as fitting to bee done seeing that wee could not hope to keepe the Castle, if we should admit that number of men which was in the towne into ye castle, being about 900 horse & foote besides ye garrison of ye castle; it was resolved to treat with theemie, to desire passes to goe to their homes to all that would take them which they graunted, & so all was dispered sauing 500 foote & my brother's troope of horse & some gentlemen that stayd, in all making about 60 horse. With these wee resolved to keepe the castle & New-hall a great house within threie muskett shot of ye castle, till such time as wee could send to know his Majesties pleasure, then Prince of Wales. This being done & all our men hauing taken passes, theemie marched quietly into the towne September ye 9th 1648, as neare as I can remember. The same day they brought downe some foote within Carabin shott of the Castle & there made a barricade & planted 3 foote colours & brought a horse guard vpon the south-west side of ye castle & placed them vpon Bag-hill. The next day wee made a sally with 100 foote & 40 horse,⁽⁹⁾ the foote vpp to their barricade & ye horse towards their horse guard. The foote entered their barricade kill'd some, tooke others & their 3

^a Allerton-Bywater, a township in the parish of Kippax, wapentake of Skyrack, about five miles from Pontefract. Boat seems to have been at this time a Yorkshire word for a ferry. In Eyre's Diary, 25 Jan. 1647, mention is made of Medley boat, that is, the ferry at Methley, about six miles from Pontefract. Yorks. Diaries (Surtees Soc.), p. 7.

^b Uttoxeter. The Duke of Hamilton was taken prisoner there circa 25 August, 1648. Com. Jour. v. 688.

colours, & beate them vpp to the markt place; our horse likewise beate their horse guard but catch'd few, they running away betimes. Fiue or 6 dayes was spent in getting in corne which was then shorne & ready for getting in which daily occasioned some skirmishing, but nothing considerable. After we had gott in what corne was within our reach wee made a sally with 30⁽¹⁰⁾ horse, vpon their horse guard & surprized them, tooke 30 prisoners & 40 horse. Some 3 nights after we beate vpp a quarter,⁽¹¹⁾ some 7 miles of, took a lieutenant & most of his troope; this put their horse to great duty; (the Nottinghamshire & Leicestershire horse being marched away) they was vpon 48 houres duty & then durst not ly within a dozen miles for feare of beating vp. In the mean time wee gett in euery night both corne & cattle more then wee spent. Wee meddled little with their foote but resolu'd to weary out their horse if possible, & to that purpose wee made another attempt vpon their horse-guard at Bag-hill which we wel⁽¹²⁾ thought to haue surprized with 24 of our horse but found them 60 horse with their colours, in very good order expecting vs with some foote marching vp ready to backe them, which made us resolute to charge them before their foote could gett vp to them which wee did & they receiued vs more gallantly then hitherto any had done; but some of their front falling with our pistolls, they begunne to turne aside and break, and being to passe through a narrow gapp & a deepe ditch wee did the more execution vpon them. Wee took & wounded their lieutenant kill'd their coronett, tooke their colours and few escaped vnwounded. This was Major Euers his troope, now Lord Euers. Their foot that was comming vp to them fled back to the towne; this made the enemy resolute to quitt that guard & make their horse guard in the Parke stronger, which was vpon ye North east side of the Castle, this left vs more liberty to forrage vpon the Southwest. Some few days after wee resolu'd to try what might be done vpon their great horse-guard in the parke & because wee imagined them very strong wee sallyed all the horse wee could make which amounted to 50.⁽¹³⁾ Their guard consisted of 150 drawne vp in 2 bodies which wee charged & routed & followed to their barricados, took the captaine that commaunded them & killed about 40.

About this time, which was (as near as I can guesse) in the latter end of October came C. Rainsborough, with his regiment of foot out of y^e South, hauing a commission from Cromwell to commaund in cheife against the castle, in stead of Sir Henry Cholmeley, who would not obey Cromwell's order, aleadging that he was not vnder Cromwell's commaund, but had his commission immediately from the Parliament, whilst this was in disputing Rainsborough quartered with his regiment of some 800 at Doncaster, whether we sent a spy to learne how he kept his guards, (desiring if possible to preuent his besieging vs, hauing as wee thought a more easy enemy to deal with) who returning told vs that hee kept a strong guard vpon the Bridge & another strong one in the middle of the towne, but none but one sentinell at the South & West auenues, which made vs imagine it possible wee might surprize him that way, and to that purpose wee marched⁽¹⁴⁾ out two and twenty of our best horse at 10 a clocke at night & by break of day came to Maxborough a village wher there is a ferry over the river. There wee refreshed our horses & reposed ourselves, as a party of Cromwell's horse come from the army, till eleuen a clocke at noone. This village was foure miles from Doncaster. Thence wee dispatched a faithfull messenger to Doncaster for intelligence & appointed him to meete vs at night at a place where wee intended to quarter which was within two miles of Doncaster, & accordingly hee came and told vs they were

very secure & had not any allarum, nor suspicion of an enemie, & acquainted vs with other particulars of their guards & quarters; so by breake of day the next morning wee mounted and by sunne rise, came to the barrs of the towne, where there stood a sentinell who demaunded whence wee came. Wee told him from Generall Cromwell's army, come vpon businesse to C. Rainsborough, so hee bid God speed vs well. Before wee came neare the towne wee had divided our horse into 4 parties, 6 to fall vpon the backs of the guard at ye bridge⁽¹⁵⁾ to make good our retreat, 6 to fall vpon the maine guard, 6 to ride the streets to prevent ye enemies making a head & 4 to Rainsboroughs lodging, and all succeeded according to our wishes. Both their guards was surprized and their foot all runne out at their back doores in their shirts and not any man offered to make head against vs, sauing Rainsborough himselfe, who when hee was brought downe into the streete & saw himselfe & his lieuutenant & ye sentinell at his door prisoners to three men and one that held their horses, without any party to second them, begunne to escape from them & cry armes armes. A coronet which was one of our foure running after him & not willing to kill him, caught him by y^e waistcoate & in the struggle Rainsborough gott his sword & Rainsboroughs lieuutenant his pistoll, but Rainsborough was thrown downe & one of our troopers runne him into the throate with his sword whilst my Brothers lieuutenant runne Rainsborough his lieuutenant through & kill'd him. In the meane time Rainsborough had gott vpon his feete, though wounded, with a sword in his hand, & receuing another thrust through the body by my brothers lieuutenant, fell down dead. This done wee threw what armes we found vpon the guards into the riuier, & marched on the rode ye nearest way to Pomfrett, and came at noone day in ye sight of all their horse into ye castle.

Some 3 or foure days after (which was in the beginning of November) came Cromwell with his army out of ye north & summoned vs^a but wee hauing lately receiued an order from his Majestie, then Prince of Wales to keep it, & that it should doe him more seruice then, then many such castles would do at another time, wee refused to deliuer it, but hee forc'd vs to quit the New-Hall, which we had hitherto kept & presently drew a line about us, planted two batteries with which hee beatt vs from our gunnes that we had planted vpon the towers, but afterwards wee gott them chambers & made so good shotts that wee killed seuerall of their canoniers, seuerall times dismounted their gunnes & at last made them that they did not play at all against vs, onely their mortar piece play'd for a long time & blew vp a great part of our building. After this little was done worth noting onlly a sharpe fiuer begunne to rage amongst vs whereof many dyed & few escaped being sicke, besides scuruies and other diseases vsually caused by a close castle & salt dyet. In this condicion wee kept it till ye March following 1648 & then hauing receiued an expresse from his majestie, then Prince of Wales^b wee deliuered it vpon such condicions as they pleased to

^a Cromwell's summons is dated 9 November, 1648. It may be seen with Morris's answer in Rushworth's Hist. Coll. part iv. ii. 1325.

^b This is a singular error of memory. Charles II. was King *de jure* in March, 1649, and the royalists in Pontefract Castle had, soon after the execution of Charles I. struck a siege-piece with the legend: *POUR MORTEM PATRIS PRO FILIO*. The writer says in his printed account, "We kept the castle till after King Charles the First was martyred, when we solemnly proclaimed King Charles the Second in it, and did not deliver it up till almost two months after." Somers' Tracts, vii. 8.

giue vs which was to march out & liue quietly at our homes, except 6 persons who were excepted from hauing any benefitt by the Articles, who sallyed out thinking to escape, but one was killed ye Gouvernor & a cornet escaped through but was afterwards taken and executed at Yorke assizes & three more were beaten backe into ye castle, where they hid themselves & escaped. Of some 600 that wee entered into the castle there came out betwixt six & seuen score and many of them sicke & lame, hauing been besieged almost 7 monneths.

^a I had forgott an action which was done after Rainsborough was killed, before Cromwell besieged us, which was this. Wee had intelligence of 300 oxen which was guarded by a troope of ye enemies horse at Wentbridge, some 3 miles from vs, & we resolved to try if wee could take them. To that purpose wee marcht out some 20 horse commanded by my brother, & some 12 foote to driue, wee found them all in one close feeding, and some few men watching them, who presently runne and gave y^e allarum to the troope whilest wee driue ye cattel away towards ye castle. Ye troope followed vs in ye reare some twelue score or more ^b distant from vs all the way, but neuer firing a pistoll against vs till wee was driuing ye oxen ouer ye draw-bridge, & then they fired their pistolls at some 12 score ^b distance & so returned hauing seene ye cattle driuen into ye castle, it being fayre moonelight.

Persons excepted. The Gouvernor C. Morris, major Ashby, Lieuetenant Austwick, Coronett Blackebourne, Lieuetenant Flood & Ensigne Smith. Smith was killed in ye attempt to gett through y^e enemies guards. C. Morris & Coronett Blackebourne were afterwards taken in Lancashire & hang'd at Yorke assizes by a Jewry at Common law: the other 3 who were beaten backe into the castle are yet all liuing for any thing I know to ye contrary.

(1) One Ashby who had formerly serv'd ye king but was then gentleman of the Armes to Cottrell, the Gouvernour, but after ye castle was taken for the king was Major of ye castle. The other was one Mr. Copley, who afterwards, when ye castle was taken, through some mistake or fright runne to the enemy.

(2) Ashby & another.

(3) Commaunded by Sir Philip Monckton, Col. Philip Byron, & Col. Robert Portington.

(4) My Lord Beaumont.

(5) Major Thimblely, who did not goe against any barricade but vp some backsides, entered ye towne with his men with out any resistence, but not observing his orders (to come vpon the backs of them that maintained ye barricade & so open it to our horse) but advancing further into the towne was mett by a troope of their horse & was taken prisoner & his men killed or taken, & the enemy knowing by some of their prisoners that he was ordered to open the barricade to our horse presently called on our horse to enter and imagining that ye barricade was opened by Mr. Thimblely marched vpp to ye barricade with some 24 horse or 30, most of them officers & gentlemen; but when they came within pistoll shott of ye barricade they perceiued it was the enemies stratagemme to call them, by two or three volleys of muskett shott that came amongst them, & some case shott from 2 drakes. Sir Richard Byron had his horse

^a This paragraph has been an afterthought. In the MS. it is written after the notes.

^b *Paces* is probably the word wanting in these places.

kill'd vnder him, his man slaine, Major Gower his horse shott; my brother Will his horse kill'd vnder him & another horse shott; my brother Tim was shott in the shoulder & ye bone broken, & in ye hand & his horse shott in three or foure places, but carryed him of. There were very few of ye party that was not either shott or their horses, & and some 10 or 12 kill'd outright.

(⁶) Col. White & Col. Hacker.

(⁷) Col. ffairfax & Sir Edward Rhodes.

(⁸) Sir Henry Cholmeley.

(⁹) My brother William commaunded ye horse, who commaunded ye foote I do not remember.

(¹⁰) Commaunded by my brother William.

(¹¹) Likewise by my brother.

(¹²) Likewise by my brother.

(¹³) This party was likewise commaunded by my brother, but after their guard was beaten into their barricade they came out with two troopes more, in all to the number of 240 horse, besides some 120 foote that came along in the enclosure; they comming fast vpon vs before wee could make our retreat, wee were forced to charge them all, which wee did, taking ye advantage of a passe which some of them was gott through, & routed them, tooke ye captain that commaunded ye first body & pursued the rest almost as farre as their barricade.

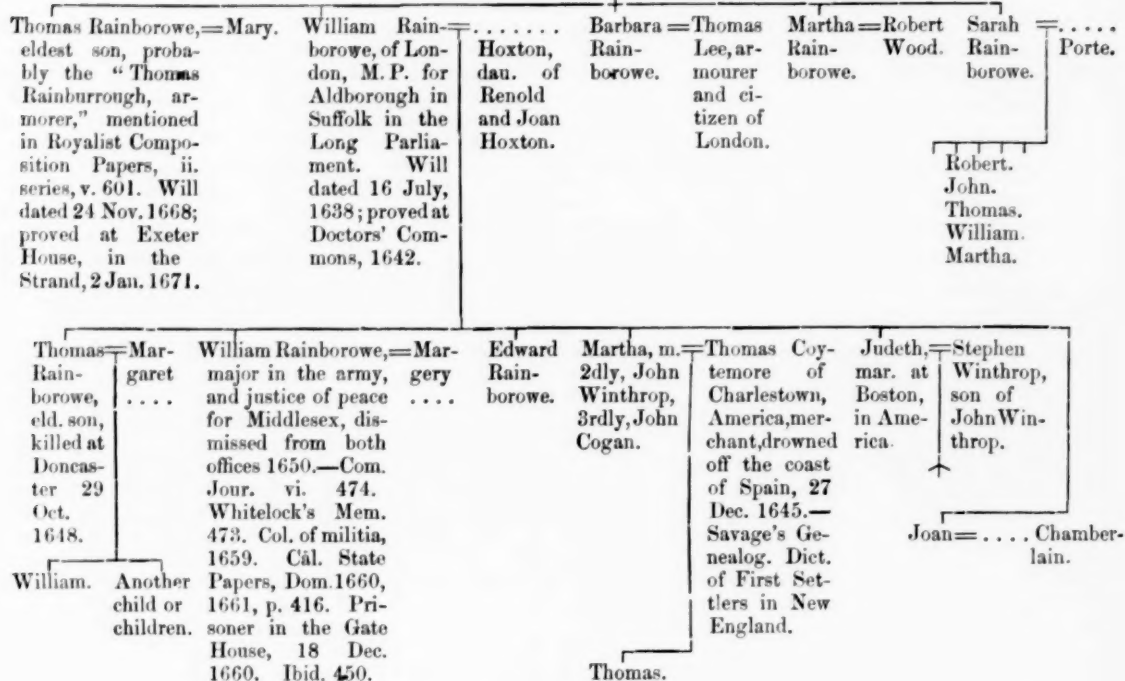
(¹⁴) Commaunded by my brother.

(¹⁵) Major Saltonstall commaunded 6 to fall vpon their guard at the bridge, my brother's lieutenant Austwick & his Coronet Blackebourne & other two was to light and goe into Rainsborough's lodging. my brother with a party of five more to see them in, & then to ride ye streets & to second any party that should find any resistance, & I and a party of 6 with my selfe to fall vpon the maine guard.

APPENDIX B.

PEDIGREE OF THOMAS RAINBOROWE.

Thomas Rainborowe, mariner of East Greenwich. = Martha of the parish of St. Bride, near Fleet Street, London. Had a lease of lands at Claverhambury, co. Essex. Will dated 4 Dec. 1622. Quoted in that of his widow. Will dated 29 Nov. 1626; proved at Doctors' Commons.



SEAL OF THOMAS RAINBOROWE.

SIGNATURE OF THOMAS RAINBOROWE.

III.—*On the Process of Decay in Glass, and, incidentally, on the Composition and Texture of Glass at different periods, and the History of its Manufacture.* By JAMES FOWLER, Esq., F.S.A., Local Secretary for the County of Durham.

Read November 30, 1876.

GLASS is, in many respects, one of the most remarkable substances in the world. No known substance combines such varied uses with such matchless beauties. For innumerable domestic purposes it has for centuries been considered a necessity of daily life. Without glass innumerable paths in science and the arts would never have been explored; and in these paths progress has been made in proportion as the methods of making glass have been improved. On the other hand the peculiar beauties inherent in or incident to this material are so great that at no period in history has man been able to grasp completely more than one of them at once. The Venetians realized above all others the marvellous capacity of glass for being wrought into all kinds of beautiful forms; our Gothic forefathers developed beyond all others its capabilities in respect of colour; the Phœnicians and Romans did wonders both in form and colour, but were nevertheless inferior to the Venetians in the former, and to our Gothic forefathers in the latter; we, in our day, excel in developing to the utmost (wonderful talent that it is!) the crystalline transparency and brilliancy of glass, but it is in this direction only that we have any true art or artists—in form and colour we do comparatively nothing. Thus, in each instance, the full realization of a period has been but as it were a passing glimpse—it has never been found possible to retain it, so as to carry it into the full realization of another period; even as the highest natural beauty is but for a moment—it increases until maturity, and then immediately begins to fade. So that we are now, after more than two thousand five hundred years of labour, but on the threshold of what is

conceivable in this kind. What would have been the result had all the excellences of past periods ever been united? What if each were pushed yet further? And why not? No such delicate or exquisite forms can be produced in any other material as are produced in glass; and this material furnishes the most delicate and subtle, as well as the most rich and brilliant, effects of colour that can be obtained by art. The faculties of man, not the capabilities of the material, alone place a limit to that which is attainable. As if still further to excite our wonder and admiration, age and the process of decay, which render other things loathsome, repulsive, and deformed, invest this substance with additional splendour.

It is the process just mentioned which will form the principal matter, or central point, of the present inquiry; but it will be found necessary to consider also, at some length, the larger and perhaps still more interesting question of the quality and texture of glass at different periods, and the history of its manufacture. It is curious that, hitherto, the subject should never have been thoroughly investigated. Though the appearances are strikingly curious and varied, seeming of themselves almost without preliminary inquiry to invite, and promising to reward, an attentive study, the subject has remained an unsolved problem on the border-land of several sciences, belonging to all but claimed by none. To Antiquaries it has seemed too chemical or mechanical a question, and to chemists and physicists too antiquarian a one. It is true that some years ago Sir David Brewster^a had his attention directed to the subject, but he confined himself to one form of decay only, and to the appearances merely, rather than to the explanation of them; being content to suggest that glass decays because the atoms of which it consists, having been "forced into union without natural

^a *Notes on the Decay of Glass, especially upon that of the Ancient Glass found at Nineveh*, Appendix to Layard, *Second Expedition*, 1853; and *On the Decomposed Glass found at Nineveh and other places*, Transactions of the British Association, 1860, p. 9. Both are important communications, and should be read carefully in connection with this subject. It so happens that my illustrative example No. 9 came from a specimen formerly in the possession of Sir David Brewster, and greatly prized by him at a time when specimens of Roman glass were much more difficult to procure than at present. Having noticed the windows of stables often coated with a precisely similar iridescence (Ex. 13), and conjecturing it was caused by ammoniacal fumes, he formed the idea that the glass might have been buried near a Roman stable, and thus acted upon by the decomposing excretions of the horses. Sir David himself scraped off some of the films, and gave them as a curiosity, with the preceding explanation, to the Reverend H. G. W. Aubrey, of Hale Rectory, Salisbury, at that time a neighbour in Scotland, who had the kindness to present them to me.

affinity," "tend to resume their primitive state and separate themselves." Others, thinking only of Gothic glass, *in situ* in churches, and observing the greater amount of decay on the south than the north side of buildings, have attributed its decomposition, some—to the moon,^a others—to the sun,^b the peculiar immunity from decay possessed by yellow stained glass being explained by its power of arresting the chemical rays of the sun: as though glass did not decay faster when buried far beneath the surface in damp soils than when *in situ*, or there were no such thing as decay of Phœnician, Egyptian, Assyrian, Babylonian, Roman, Celtic, or Saxon glass in graves, tombs, or other localities where no ray of light ever penetrated. Some, finding lichens growing in profusion on old glass, have attributed its decay to their presence,^c whereas more careful observation would have shown myriads of specimens of decay without the presence of a single lichen, and that the glass must first be decayed before the lichen can find upon its surface a resting-place for its tapestries of gold and silver. Mere dirt, again, and dust, both on the outside and inside of windows, and confervoids, often seen on the inside of windows in damp situations, are not unfrequently mistaken for decay, and *vice versd*. Lastly, some, and indeed by far the great majority, of observers, recognising a process which they could not understand, have avoided the difficulty of making an explanation by attributing the appearances to corrosion, rust, or the like, terms which explain nothing. Let us inquire, then, what are really the phenomena of decay in glass? What, in this case, more exactly, do we mean by such terms as corrosion and rust? How are these processes originated? And in what do they result?

Unlike the rusting of iron or bronze, which is substantially the same under whatever circumstances produced, the rusting or decay of glass takes place in several modes, which differ widely in appearance according to the circumstances under which they are produced. The primary modes of decay in glass are two,—filmy and granular: but of the latter there are four secondary forms, which I propose to call respectively—superficial creeping, deep creeping, spotty or pitting, and splitting or crackling granular.

^a Bernard Palissy, writing in 1563, says the glaziers in Poitou and Bretagne attributed the decay of their church-windows to the moon.

^b This view was advocated by at least one of the speakers in the discussion which followed the reading of this Paper.

^c "A diminutive moss or lichen, which absolutely decomposes the substance of the glass in vermicular lines." Whitaker, *Loidis and Elmete*, ii. 322, note. See also Winston, *Inquiry*, &c. 1867, i. 23.

I.—DESCRIPTION OF THE DIFFERENT MODES OF DECAY IN GLASS.

A. FILMY, BLISTERING, OR IRIDESCENT DECAY.

This form of decay is characteristic of the transparent or crystalline makes of glass; of the early Assyrian and Babylonian, for instance, if we may take as examples the vessel bearing the name of Sargon, King of Assyria, and other specimens in the British Museum;^a of the later Phœnician and Egyptian, of which there are many specimens in the British Museum; of the Greek; of Roman, whether bottle-glass, window-glass, or the glass of artificial gems,^b down to the latest period of which we have specimens (catacomb glass); of some of the earliest Teutonic glass (Saxon); probably also of Saracenic, Persian, and Byzantine glass, though specimens of these makes are so extremely rare, and usually so well kept, that it is impossible to speak with certainty; certainly however of the finest and most perfectly made Venetian glass; of modern crown glass, the inside of panes in stables, for instance, and (in a less degree, but very commonly) the outside of panes in dwelling-houses; of modern waste glass of all kinds thrown on ash-pits or manure heaps, the source, probably, of those fragments of iridescent glass which may be picked up in almost any garden or field;^c of modern bottle-glass buried in certain soils, or in the mud at the bottom of ponds, lakes, and rivers, or in ships sunk in the sea; of old microscope and telescope lenses, termed by opticians "tarnish," "sweating," "rust," or "mildew," incapable of being washed off or rubbed off, necessitating the repolishing of lenses thus affected to any great extent before they can be seen through again distinctly, and of other modern glass used for scientific purposes.

^a In the British Museum there is a large quantity of ancient iridescent glass, collected by Mr. Layard in Mesopotamia, and believed to be Assyrian; but it is probable that most of the specimens are of the Roman period, derived from the Roman colony *Niniva Claudiopolis*, which occupied the site of ancient Nineveh. A similar difficulty occurs with respect to the fragments of iridescent glass found by Captain Warren in his excavations at Jerusalem. It is impossible to say where the specimens thus discovered were manufactured.

^b There are several Roman pastes in the British Museum which show iridescent decay.

^c Though, strangely enough, there was a proposal in *The Field* newspaper, 23 Dec. 1876, to manure soils poor in silica with broken glass.

This kind of decay begins, as a rule, by a general slight dulness or loss of polish and transparency, to the naked eye, but which, magnified, is found to arise from removal of a portion of the surface by a process closely resembling that which takes place at the commencement of the first form of granular decay presently to be described; either the general surface going, and multitudes of bright striæ or other hard portions being left in relief, or the general surface remaining unaffected, while the striæ or other soft portions become dull and excavated (Ex. 1, with which compare Ex. 23, 24, 26, 31, 32).^a To this altered surface, if the glass be buried, the soil in time so firmly adheres that it entirely conceals, and cannot be separated without removing, the surface to which it is attached (Ex. 2, 6, 7). Beneath are formed innumerable extremely minute circular filmy blisters, at first colourless, which to the naked eye give the surface a silvery appearance, or it may be the appearance of ground-glass merely (Ex. 1). As, however, the blisters increase in size, and their walls get thinner by other parallel films like the coats of a pearl or onion splitting off from them, they become coloured, and give rise to a brilliant metallic-looking iridescent patina, as we see on Roman and other buried glass from which the outermost coat has been removed (Ex. 3, 4, 5, 6). Films go on thus blistering off the glass and from one another, if undisturbed, until the whole thickness of the piece is decomposed,^b and it either of itself falls into a heap of iridescent scales which a breath will disperse, or becomes so tender that it will crumble into dust between the fingers of a child. If the surface be not much disturbed, the films and blisters unbroken, the latter of every form, and varying in size from less than $\frac{1}{5000}$ th up to over $\frac{1}{100}$ th of an inch or more in diameter, may readily be seen through the microscope *in situ* (Ex. 1, 3, 4, 7, 8, 9, 13); but to examine them minutely, some of the scales which form the altered surface must be detached. The extraordinary beauty of the films of which these scales consist is very

^a These numbers refer throughout to the illustrative examples, of which a list will be found appended.

^b I have avoided defining what takes place more precisely, because I have not myself been able to observe more. Sir David Brewster describes the gradual formation of "hemispherical cups" of films, like nests of watch-glasses, answering to what I have described as blisters. I have not been able to verify these observations, nor the appearance as "of the section of a pearl or of an onion." Anything advanced by so careful and skilled an observer as Sir David is nevertheless of importance; and I would again refer the reader to a careful perusal of his papers. At the same time I must confess that it is not quite easy at all times to be certain how far he is describing what he himself actually saw, or his inferences from what he saw. That he is distinctly wrong in stating that the films are still glass and not silica arising from the decomposition of glass, is proved by the analyses which will be given hereafter.

remarkable. They are bright and specular when seen by direct, and of the most pellucid transparency by transmitted, light. The thicker ones are colourless, and may be sections of single blisters of large size, in which case their surfaces are more or less flat and even; the thinner ones are coloured, and may like the others have flat and even surfaces, but by far the most frequently have a roughened or corrugated appearance, produced by numerous hemispherical cavities on one side and hemispherical convexities on the other, sections of the blisters by which the films have been separated from their fellows. Where the cavities are not sufficiently near to encroach on one another they are circular in section, but where they are crowded they are irregularly polygonal, as described by Sir David Brewster; "the sides of the polygons forming a sort of network, the cavities or convexities forming the meshes of the net" (Ex. 9). Within the thickness of these thicker films are frequently seen numbers of secondary blisters, circular or polygonal, as yet unbroken, each of which in polarized light shows a beautiful black cross (Ex. 7, 9). The colours of the thinner films are those of the spectrum, and rival in dazzling brilliance the tints of the soap-bubble. The flat and even-surfaced ones are each of one colour (Ex. 8), the rough ones each often of many, the lines of corrugation also showing, according to circumstances, a lighter or darker colour than the rest of the film, or a colour entirely different, or a play of colour (Ex. 9). All films and parts of films, if of one colour by direct, are of the complementary colour by transmitted, light (Ex. 5, 9, 11, 13). Many, though at first sight apparently of but one thickness, consist of several still thinner films, which may under favourable circumstances be counted. The greater the number of films of one colour that overlie one another, the deeper is the colour of the whole. When two films or sets of films of two different colours overlie, the tint produced is a mixture of the two; yellow and blue producing green, pink and blue purple, yellow and red orange, and so forth. Unbroken blisters in the thickness of these thinner films are of rarer occurrence, but a few here and there may generally be found, showing the black cross by polarized light, with a tint round it complementary to that of the general tint of the film, a pink film furnishing a black cross on a green ground, and so on. The shape of the cross varies with the form of the blister, and with "the number and curvature of the films" (Brewster) which compose it (Ex. 9). It has been mentioned that many of the films apparently of one thickness are in reality of many. I have counted eighteen and twenty (Ex. 9); and under favourable circumstances a section may be obtained showing numbers of these compound films, or bundles of films, lying parallel and closely packed

like the leaves of a book (Ex. 10.) If a drop of water or alcohol be applied either to the edges of these bundles or their surface, the iridescence vanishes in a moment, but it returns when they are dry. Fixed oil destroys the iridescence permanently. Boiling in acid has no action upon them (if care be used, in order to prevent their being cracked and broken to pieces by the heat), except by dissolving any foreign matter that may chance to adhere to them, to render them more brilliant (Ex. 11).

The "sweating" of Venetian glass is a modification of filmy decay, in which the products of decay are deliquescent; "blooming" is the ordinary decay, but incipient or arrested, or, if more advanced, tending to efflorescence. In the British Museum there is a fine example of the dry form of decay in its complete form, brilliantly iridescent (see also Ex. 12); but specimens of Venetian glass are so carefully preserved, and cleaned, that it is not easy to find examples of decay. Even the best crown glass window-panes, in houses, cannot long resist the action of the weather. Without any apparent loss of polish or transparence, the outer surface not unfrequently becomes faintly iridescent, reflected light showing a distinctly perceptible tarnish, even though, by transmitted light, nothing of this is visible. Here again the manifestations of decay are interfered with by habitual washing and cleaning, and the surface is not allowed to become coated or to lose its polish; but the iridescence, once begun, increases, and in many instances becomes quite marked and decided. In old inn stables, or stables in out-of-the-way places where the windows are never cleaned, the process goes on without interruption, and magnificent effects of brilliant colouring result (Ex. 13). The incrustation does not readily wash off, though it entirely loses its colour on being moistened, recovering it when dry. On the application of heat, the surface becomes covered by an infinite number of cracks, which cross and interlace in all directions; very thin pearly scales become detached in great numbers; and the surface is left bereft of polish, and uneven. The "tarnishing," "mildewing," "sweating," or "rusting" of lenses of fine glass, both crown and flint, especially affecting the denser varieties of the latter, is essentially the same process, iridescent little spots forming, like thin patches of oil or tar floating on the surface of water, and spreading, and deepening. There is however some little difference in detail; the polish of the lens in some cases being destroyed before iridescence commences (Ex. 14), and at other times not until the surface is broken by the separation of decomposed and fully iridescent portions (Ex. 15, 16, 17). Glass tubing, long kept in store, by a similar process becomes encrusted with decay, especially on its inner side, where moisture condenses. When heated in a spirit lamp in

order to bend it, or for any other purpose, films peel off at once, the polish is gone, and the material in many cases is entirely useless (Ex. 18). Similar appearances are produced, but much more rapidly, in glass used in various chemical operations (Ex. 19), in the store-bottles of certain chemicals (Ex. 20, 21), and in glass acted on by fluoric acid (Ex. 22).

B. GRANULAR DECAY.

The different forms of this decay are characteristic of prehistoric glass generally; of the earlier Egyptian, Phœnician, and Celtic glass; and of Gothic (English, French, German, Italian, Spanish) glass since the earliest period of which we have specimens (Early Teutonic), whether *in situ*, exposed in varying degrees to air and moisture, or buried in damp soils. In all forms of this decay, the glass, instead of separating into laminæ or films, crumbles into a fine dust or sand. The first three forms are specially characteristic of Gothic window-glass *in situ*; the first—of the technically best makes, the second—of those which are of intermediate quality, and the third—of the worst, as well as of both opaque and horny Egyptian, Phœnician, and Celtic glass. The fourth form is characteristic of Gothic glass of all periods and qualities when buried in damp soil.

1. *Superficial Creeping Granular Decay.*

This begins as the slightest perceptible dulness or abrasion of the surface (Ex. 23), to which, in undisturbed situations, dust and dirt attach themselves very firmly (Ex. 24). The surface is not removed at once, or uniformly, but gradually and irregularly; and curious appearances are presented by the remains of those portions which, being the hardest, are the last to disappear. In some cases a number of minute specks or islands of irregular and fantastic shape are left, bright and unaltered, in the midst of the dull and roughened part around them (Ex. 25), whilst, in others, it is the striæ (minute and innumerable) from which no Gothic glass is free, which remain, cropping out upon the surface, and crossing and recrossing one another in all directions like threads of the finest gossamer (Ex. 26, 27). The sharp edges, both of the islands and striæ, if sufficiently near together, act as series of minute prisms, decomposing light, and thus producing a characteristic iridescence (Ex. 28, 29, 30). This iridescence is however as different in appearance from that described under the preceding section, as it is different in the mode of its production. By reflected light the colours are never at all

brilliant, resembling rather the comparatively subdued tints of mother-of-pearl, while, by transmitted light, they cannot be seen at all, except when the plane of vision passes through the glass obliquely in certain particular directions. The aisle windows of the nave, at York; the east and some other windows in the cathedral, at Gloucester; some of the windows in the cathedral and church of St. Ouen, at Rouen; and various other stores of fourteenth-century quarry glazing, afford magnificent specimens of this kind of iridescence. It is also common on the exterior of windows of the fifteenth century, but, by reason of the greater thinness and transparency of the glass, is not seen so well from the interior. Where the striæ are of softer texture than the rest of the surface, instead of being left in relief, they are the first to go. The bright and, to the naked eye, uncorroded surface again becomes crossed in all directions by myriads of the finest discernible lines like extremely minute scratches,^a or gossamer, in this case dull on a bright ground—not, as above, bright on a dull ground (Ex. 31), which gradually, at different rates, widen and deepen (Ex. 32), until at last the whole surface becomes a network of intersecting lines of corrosion (Ex. 33). In many cases the surface is destroyed rapidly by a mixture of processes; the general surface being abraded whilst the harder striæ are left in relief and the softer excavated (Ex. 34): or the whole surface becomes coated with an exceedingly fine white mealy efflorescence, which in dry and undisturbed situations gradually accumulates (Ex. 35). It is readily blown off however by wind, washed off by rain, or brushed off with a feather or by the finger; and, digested in acid, is resolved into a soluble portion and an insoluble portion; the latter consisting of finely divided bright transparent particles of as yet undecomposed glass, and of amorphous silica (Ex. 36). The surface of the glass beneath, from which this matter is removed, is left dull, bereft of polish, like more or less finely-ground glass, affording free passage to light, but not allowing objects to be seen through distinctly (Ex. 35). In some specimens, especially those of late date (fifteenth century), after the separation of tracts of this kind of decay, a second form of spurious iridescence is left; brilliant colours—violet, blue, green, orange, and crimson, being distributed in multitudinous disjointed (and yet generally closely adjacent) minute patches or spots, upon the new rough or ragged surface, as sometimes seen also in the fourth form of granular decay (Ex. 82).

^a An unpractised eye would certainly mistake these lines for scratches, and at once conclude them to be so. By the microscope, however, they are readily distinguished; for, whilst the edges of the finest scratch are always rough and irregular, from the chipping off of particles conchoidally on either side, the striæ, whether left in relief or corroded, always have a smooth, even if it be an irregular, outline.

2. Deep Creeping Granular Decay.

This begins, not as in the last instance, by abrasion. The surface is at first (to the naked eye at least, like that of certain lenses affected with filmy decay, Ex. 16) smooth and unbroken, decay beginning by loss of transparence, which gradually extends in serpiginous spreading patches of greater or less depth, so as eventually to form semi-opaque and quite opaque white or greyish-white crusts (Ex. 37, 38), sometimes of considerable thickness, earthy to the touch, which gradually exfoliate in splintery layers like broken slate or laminæ of decomposing oyster-shell, leaving more or less wide, irregular shaped, shallow excavations, with ragged edges (Ex. 38). The new surface of glass exposed is rough and uneven, without polish, like coarsely-ground glass by reflected, but of a rich silvery or pearly appearance by transmitted, light (Ex. 38). All stages of this form of decay may frequently be seen upon a single panel, or even pane; incipient loss of transparence, semi-opacity, complete opacity, formation and exfoliation of crusts, exposure of uneven surface beneath, and renewed decay (Ex. 38). On treating the crusts with acid, a fine sand, in character precisely resembling that produced by the first form of granular decay, is obtained (Ex. 39).

3. Spotty, or Pitting Granular Decay.

Long before any trace of this form of decay is visible to the naked eye, and whilst the surface remains apparently bright and clear, the microscope detects minute transparent circular spots, which enlarge by formation of concentric circles of like character from within outwards (Ex. 40), and gradually become white or greyish-white, semi-opaque, and quite opaque, in the same order (Ex. 41, 42, 43). The outlines of these spots and rings are generally extremely sharp and clearly defined. Increasing in size and depth, they vary, when complete, from the smallest spot visible to the naked eye to the size of a pea, or even larger, and are either separate, or run one into another (Ex. 47, 55, 59). Sooner or later they begin to disintegrate. Sometimes a small pit is first seen in the centre of each (Ex. 44), which gradually widens and deepens, exposing a cavity more or less thickly lined with white, spar-like, sparkling matter, often arranged in elegant and fantastic shapes, the edges of the opening overhanging the cave below (Ex. 45, 46, 47); sometimes excavation begins at the circumference and proceeds inwards, leaving, before it is completed, a central pillar of sparlike matter (Ex. 47); sometimes, instead of one ring of excavation around the centre, there are several,

one within the other (Ex. 47); or sometimes, more curiously still, radii of excavation proceed from the centre to the circumference (Ex. 47). Eventually all the decayed portion vanishes, and pits are formed, in transverse section more or less circular,—to the naked eye generally quite so, varying from less than one up to five or six sixteenths of an inch in diameter, but in longitudinal section either shallow or deeply cup-shaped (Ex. 48), shallow with undercut or perpendicular sides and flat or cup-shaped bottoms (Ex. 49), or deep with perpendicular sides and flat or cup-shaped bottoms (Ex. 50). In all cases the sides and bottoms are more or less rough, like ground glass (Ex. 48–51), as in the last two forms of decay; and the powdery matter which is thrown out is the same (Ex. 52). If the spots have been confluent, or even close or near together only, their excavation leaves the surface rough, ragged, jagged, and honeycombed (Ex. 47, 53, 54, 55, 56, 57). A striking appearance is produced by the removal, in the most fantastic shapes, of the flashing of ruby glass of the fifteenth century (Ex. 54); whereas the colour in ruby glass of the fourteenth century, and earlier, being distributed through the thickness of the pane, is broken only by decay, and not lost (Ex. 46). All stages of decay may often be seen in progress upon a single piece (Ex. 47, 55, 56, 59), sometimes on both sides at once, until little of the original thickness of the glass remains (Ex. 57). On breaking the pane, however, the interior is found clear and transparent. The roughened surface, and pulverulent matter left by advanced decay, form a favourable nidus for the germination of spores of lichen, which readily grow there, and spread thence over the surface (Ex. 58). Within the safe shelter of the deeper pits may frequently be found chrysalises of minute insects, and nests of spiders or insects. Such pits as are not completely excavated, or are thus occupied, appear by transmitted light as dark spots; as also do the deeper and narrower pits, when empty, the rays of light penetrating too obliquely to illuminate them completely. Thus the tendency of the third, as well as of the second, form of granular decay is to cause much more opacity than the first (Ex. 59). Where the pits are deep, and unexcavated, opacity is complete.

4. *Splitting, Crackling, or Crumbling Granular Decay.*^a

The earliest manifestation of this decay is the formation of an extremely

^a "Vitrum putrefactibile ultimum, in aere manet velut æternum. Sepultum vero post annos, fragedinem admittit, crusta obvolvitur, sal ejus dissolutum, fatiscit: et arena sui constitutiva permanet." Van Helmont, *Opera*, edit. 1667, 95, § 15.

minute black speck, around which a circular area next forms, less transparent than the rest of the glass by which it is surrounded. The speck, or nucleus, then gradually shoots out one, two, three, four, five, or more fine black lines, which would extend beyond the circumference of the circle, were it not that the circumference is as it were carried forward at the points at which it would have been intersected, so as to form a star of three, four, five, or more points, with a black speck in its centre, and a fine black line running down the centre of each point. These stars are either scattered separately over the surface, or aggregated in bands like the crystals on a string of sugar-candy (Ex. 60). Sometimes, instead of from a minute point, or speck, the starring and splitting up of the surface radiates outwards from an incipient spot (Ex. 61, with which compare Ex. 40, 41, 42, 43), which, again, instead of disintegrating uniformly (Ex. 44, 45, 46), itself cracks and splits up into fragments (Ex. 62), having either a large dark brown or black nucleus (Ex. 63, 64, 68), or a quantity of dark granular matter between its different rings or layers (Ex. 65, 68, 69, with which compare Ex. 41), or so much dark matter throughout as to be absolutely opaque (Ex. 70). Or, without either nuclei or spots, the surface may be split up by innumerable independent cracks or fissures, filled with dark brown matter; the appearance under the microscope closely resembling that of crackle-glazed earthenware (Ex. 71). Several of these processes may often be seen together upon a single pane (Ex. 72, 73), which in time becomes black, perfectly opaque, and disorganized throughout its entire thickness, rotten, and ready to disintegrate (Ex. 74, 75), crackling and crumbling into a coarse black sand between the fingers (Ex. 76), a very thin core only of clear transparent glass remaining in some cases, sandwichlike, between the two disintegrated layers (Ex. 77). The surfaces of this core, from which the different sections of the upper and lower surfaces have been conchoidally split off, is singularly uneven, brittle, and readily fractured; prepared, but for our having disturbed it, to have become implicated in the processes which destroyed the rest. Not very infrequently we find, interspersed here and there amongst the black crumbling matter produced by this form of granular decay, portions of a third form of spurious, confusedly and indistinctly developed filmy decay (Ex. 78, 79, 80, 81, 82, 83, 84, 85). The films or scales are comparatively small, uneven, but little iridescent, scattered in all directions through the thickness of the pane, and, *in situ*, are coated usually with a quantity of powdery matter, so that they cannot well be examined until they have been boiled in acid (Ex. 86). For greater clearness the spurious forms of iridescence may be compared with the true, as follows:—

a. True iridescence:—brilliant colours melting insensibly one into another, reflected from films lying parallel with the surface of the glass; essential to filmy decay.

b. First form of spurious iridescence:—faint colours melting insensibly one into another, refracted from the edges of loose angular fragments or of striæ or other hard portions of the surface; accidental to the first form of granular decay.

c. Second form of spurious iridescence:—brilliant colours in disjointed patches, reflected from films lying parallel with the surface of the glass; accidental to the first and fourth forms of granular decay.

d. Third form of spurious iridescence:—faint colours in disjointed patches, reflected from films lying more or less obliquely to the surface of the glass; accidental to the fourth form of granular decay.

The three spurious forms, it will be observed, are all of them accidental, and to be observed only occasionally. The first is the most common; the third, less so; the second is rare. I have not thus far seen any of them complicating either the second or third modes of granular decay, but further experience might perhaps discover instances.^a

II. CLASSIFICATION OF THE DIFFERENT MAKES OF GLASS SUBJECT TO DECAY.

That the forms of decay enumerated above are characteristic of the makes of glass to which they are attributed, is ascertained by observation of the different makes now in use or preserved as curiosities in museums,^b and of the modes in which they are, severally, affected by decay.

^a There is a mode of decay referred to by Knapp (*Chemical Technology*, ii. 8) and various other writers, on the authority of Colladon (*Journal de Chimie Médicale*, Paris, xx. 258), which I have not described, because I have not myself seen it. Some pieces of glass were found in "an old pit twelve feet deep, both flexible and so soft that they could be kneaded and cut with a knife, but which regained their hardness and frangibility by exposure for several hours to the air." Can such a tradition have originated in the fact that Roman and other bottles and jars dug up are often bulged and indented (from original faults in their manufacture), supplemented by the imagination that the bulging and indentation was done when they were dug out, and that they subsequently hardened again?

^b There is in the *Guide to the British Museum* an excellent notice of the glass by Augustus W. Franks, Esq. F.R.S. F.S.A. and the sumptuous Catalogue of the Slade glass, with Introduction by Alexander Nesbitt, Esq. F.S.A. is, of course, invaluable. The writer regrets however that he has never had an opportunity of carefully studying the latter (which was privately printed and very limited in number), though he is indebted to R. H. Soden Smith, Esq. the Librarian of the South Kensington Museum, for having once had the opportunity of looking it over. The forthcoming Catalogue of Glass at South Kensington, also by Mr. Nesbitt, is sure to be a valuable as well as an easily accessible volume.

For our present purpose the most important makes of glass may conveniently be classified as follows :—

Type.	Make.	Age (approximative).	Technical Quality.	Decay.			
1. <i>Opaque,^a or Porcellaneous^b</i> :—Imperfectly translucent; lustre slight; texture heterogeneous; in so far as otherwise resembles next.	Egyptian..... Phoenician Jewish..... Celtic	25th cent. B.C.—9th cent. B.C. 16th cent. B.C.—9th cent. B.C. 11th cent. B.C.—9th cent. B.C. 8th cent. B.C.—6th cent. B.C.	} Worst } Worse				
2. <i>Translucent,^a or Horny^b</i> :—Imperfectly transparent; lustre moderate; texture intermediate between land 3; in so far as otherwise resembles next.	<i>Ancient:</i> Phoenician..... Egyptian Jewish Celtic..... <i>Medieval:</i> Early Teutonic (German) Gothic (English, French, German, Italian, Spanish)	} 9th cent. B.C.—6th cent. B.C. 6th cent. B.C.—3rd cent. B.C. 6th cent. A.D. 6th cent. A.D.—16th cent. A.D.					
3. <i>Transparent,^a or Crystalline^b</i> :—Perfectly transparent; lustre great; texture homogeneous.	<i>Ancient:</i> Phoenician, Assyrian, Babylonian, Persian, Jewish, Egyptian, Greek, Roman, Celtic, Early Teutonic (Anglo-Saxon)				8th cent. B.C.—6th cent. A.D.	} Good } Better } Better	Grannular. <

^a Bodies are said to be *opaque*, when they allow neither light nor objects to be discerned through them; *translucent*, when they allow light to be discerned through them but not objects; *transparent*, when they allow both light and objects to be discerned through them.

^b Glass is here called *porcellaneous*, *horny*, or *crystalline*, from its resemblance to porcelain, horn, or crystal, in appearance. How closely the ancient opaque glass resembles *porcelain*, is shown by the fact that in the early hand-catalogues of the British Museum many of the vases now known and described as of "opaque glass" are described as being of "porcelain or opaque glass," it being doubtful which of the two they were. That they were really glass was eventually proved, however, by the appearance of fractured specimens, and by some of the vases being found to be not so opaque as others. The translucent makes of glass very closely resembled *horn*, cut about as thin as that formerly used for lanthorns, but not so thin as that for horn-books. Pliny compares the Roman glass to *crystal*—"proxima crystalli similitudine" (*Hist. Nat.* xxxvi. 67. The Greeks used the same word (Κρύσταλλος) both for (their transparent) glass, ice, and crystal. Crystal was indeed supposed to be ice, congealed by so intense a cold that it was impossible to thaw it.

Speaking broadly, we seem justified in saying—1. That during the earlier Prehistoric Times, including both the Stone Ages, the art of glass-making must have been altogether unknown; since no specimens of such date have ever been discovered, since there were no facilities for cutting or cleaving wood expeditiously, since there was no knowledge of furnace construction, and since an artificial want of this kind implies a degree of civilization, if not of luxury or refinement, such as we have no evidence for supposing existed during those periods. 2. That during the Bronze Age, say, roughly, on the shores of the Mediterranean, from the twenty-fifth century B.C. to the ninth century B.C., an opaque or porcellaneous glass (scarcely true glass at all, lacking, as it did, the almost essential quality of transparency, but yet representing the first rudimentary, childish effort of man at making glass) was pretty extensively manufactured; no better during that period being possible because of imperfect knowledge respecting choice and preparation of fuel, because of imperfect furnace construction, because of the refractory nature of the sand on the shores of the Mediterranean, and because of want of knowledge respecting fluxes; not, however, that we can admit with M. Figuier,^a and other writers, that glass was a necessary discovery of the Bronze Age, suggested by the vitreous slag of the furnaces produced during smelting, because no amount of observation of such slag could suggest, in an age ignorant of chemistry, the method of making glass from sand and alkali. 3. That, during the first period of the Iron Age, say, on the shores of the Eastern Mediterranean, from about the ninth^b century B.C. to the sixth century B.C., or in the countries bordering on the Western Mediterranean somewhat later, a translucent or horny glass was manufactured, as the result of gradually increasing knowledge and experience. 4. That, later still (though at first contemporaneously), say from the eighth century B.C. to the sixth century A.D., by the later Phœnicians, Egyptians, Greeks, and Romans for instance, a perfectly transparent glass, more or less closely resembling crystal, was manufactured, in consequence of the perfection of appliances and arts hitherto only rudimentary, and the discovery of various additional processes. 5. That, in Western Europe, from the sixth century A.D. to as late a period as the sixteenth

^a *Primitive Man*, Eng. edit. 1870, p. 261.

^b "Hesiod, who is supposed to have written about 900 B.C., and who is the earliest European author whose works have come down to us, appears to have lived during the transition between the Bronze and Iron ages . . . speaking of those who were ancient, even in his day, he says that they used bronze, and not iron . . . The Trojan war also took place during the period of transition." (Sir John Lubbock, Bart., *Prehistoric Times*, p. 5.) There are occasional references to the use of iron of much earlier date, in the Pentateuch, for instance, but it cannot be inferred from these that the use was at all general.

century A.D., a horny translucent glass was made, similar to the intermediate glass of the Egyptians and Phœnicians, arising in the first instance out of an imperfect imitation of the Roman, but subsequently becoming a determinate and characteristic development peculiar to itself. 6. That in Eastern Europe, parallel to and contemporaneous with the preceding, a clear or crystalline glass was made, embodying and handing down the ripened experience of both the Greeks and Romans. 7. That, from the sixteenth century to the present day, substantially the same method of making glass has been employed throughout the civilized world; the Eastern arts, previously unknown in Western Europe, having found their way thither, through Venice, during the sixteenth century. It will now be our study to consider this history somewhat more in detail.

A. OPAQUE, OR PORCELLANEOUS GLASS.

a. Egyptian. That the Egyptians were acquainted with the art of glass-blowing as early as the fourth dynasty (circ. B.C. 2450), is proved from representations in the tombs of the first Pyramid period.^a That they worked an opaque glass, at least as early as the eleventh dynasty, is proved by the amulet of opaque blue glass, in the British Museum, bearing the prenomen of Nuantef IV., placed by Lepsius between B.C. 2423 and 2380. The paintings at Beni-Hassan, executed during the reign of the first Osirtasen and his immediate successors, circ. B.C. 1740-1697, distinctly represent glass-blowing.^b And there is in the British Museum an opaque glass jug of turquoise-blue colour, with yellow ornaments, bearing round its neck the titles and prenomen of Thothmes III., monarch of the eighteenth dynasty, circ. B.C. 1600-1500. Modern discoveries and research alike thus confirm the conclusion of M. Boudet^c and of M. de Pauw,^d that Egypt was the cradle of the art of glass-making.

b. Phœnician. Phœnicia was probably the next most ancient seat of glass-manufacture. The date of origin of the Phœnician people cannot be discovered, but we know it was anterior to the conquest of Canaan by the Israelites, B.C. 1450; and it may go back as far as the sixteenth or seventeenth century B.C. or earlier.^e A close connection between the civilization of Phœnicia and Egypt in

^a Sir J. G. Wilkinson, in Rawlinson's *Herodotus*, App. Book II. ch. viii. p. 345.

^b Sir J. G. Wilkinson, *Ancient Egyptians*, iii. 88.

^c *Notice Historique de l'Art de la Verrerie né en Egypte*, Description de l'Egypte, II. iii. 2.

^d *Recherches Philosophiques*, p. 304.

^e Kenrick, *Phœnicia*, 57, 61, 340. "Broadly speaking, we may begin to date Phœnician history from the time when Sidon first assumed the rule, or about 1500 B.C." Deutsch, in *Kitto, Cyclop. Bibl. Lit. s.v. Phœnicia*).

early times is suggested by the mythology and several of the religious rites in the two countries being strikingly similar,^a by the arithmetical system of the two being the same,^b and by the statement of Herodotus,^c that the commencement of Phœnician commerce was the transportation of the wares of Egypt and Assyria; of embroidered linen and corn from Egypt, the Phœnicians giving in exchange "not only their own raw produce and manufactures, but gums and resins for embalming, wines and spices."^d That Pliny was mistaken in attributing the invention of glass to Phœnicia,^e there can be little doubt; but he is probably correct when, describing the discovery *so far as Phœnicia is concerned*, he says it was made by "nitre-merchants," merchants in all probability therefore trading from Egypt.^f The manufacture of beads by the Phœnicians is probably extremely ancient, but it is now difficult, or impossible, to distinguish those made there from others; a bead, in its simplest form, having little distinctive character. The earliest specimens attributed, with any degree of confidence, to Phœnicia, are the vases of light or dark blue opaque glass, with feathery or wavy lines of yellow, light blue, and white colour running in horizontal bands on the surface round the body of the glass. These vases differ remarkably in form and make, as Mr. Franks has pointed out, from unquestionably Egyptian specimens; the forms being frequently *alabastra*, *amphoræ*, and *præfericula*—more Greek than Egyptian. They were probably made at Sidon.^g There are some of these beautiful vases in the British Museum, from Egypt, as old as the eighteenth dynasty (circ. B.C. 1600—1500).^h But vases of exactly the same type, differing only in detail, are found in various parts of Greece, in the islands of the Archipelago,ⁱ in Cyprus, in Italy, Sicily, and throughout the borders of the Mediterranean;^k from which

^a Kenrick, *op. cit.* 297.

^b *id.* 229.

^c Herodotus, I. i.

^d Deutsch. *loc. cit.*

^e *Hist. Nat.* xxxvi. 65. ". Quibus accensis permixta arena litoris, *translucetes* novi liquoris fluxisse rivos, et hanc fuisse originem vitri." The expression in italics is interesting, as showing that Pliny took for granted that the first glass made was as transparent as that of his own day.

^f The Egyptian nitre-pits (i.e. natron, or soda pits, pits containing native carbonate of soda), and artificial nitre works, were the most famous of the ancient world. For Pliny's description of them see *op. cit.* xxxi. 46. The ruins of glass furnaces are still seen at the natron lakes. Sir J. G. Wilkinson, note 8, to Rawlinson's Herodotus, ii. 44.

^g *Slade Collection of Glass*, Guide to Brit. Mus. p. 117.

^h Dr. Birch, *Egyptian Antiquities*, Guide to Brit. Mus. p. 119.

ⁱ There are many fine specimens in the British Museum, from Camirus in Rhodes, claimed as Phœnician by so high an authority as Mr. C. T. Newton.

^k In the British Museum there are some fragments of such Phœnician vases of opaque glass from the temple of Athor, at the Sarabut-el-Khadem, in the peninsula of Sinai. It is not impossible that these precious remains may be part of the spoil of the Egyptians, carried there by the children of Israel.

we infer that the Phœnicians carried the products of their art, if not the art itself, into their various colonies and trade resorts. Although of so early a date, these vases are triumphs of glass-work; as regards true artistic feeling and skill of manipulation, beyond anything practicable at the present day. They were, in all probability, part of the store of toys with which, as Homer tells us,^a these earliest navigators traded.

c. Jewish. Respecting the manufacture of glass amongst the ancient Jews, we know comparatively little. It seems difficult to suppose that the art could have been learned in Egypt,^b differing so far as the two races did there, in social position, traditions, customs, manners, language, and religion; but nevertheless Michaelis, in his learned treatise,^c has no doubt that it was practised by the Jews before the separation of the ten tribes, and, with many other learned writers,^d considers that the blessing of Zebulon^e had special reference to the enrichment of the tribe of Zebulon by the same arts as its Phœnician neighbours. The river Belus, from which the Phœnicians got their sand, was situated on the confines of Palestine. The intercourse between the two countries was intimate and friendly.^f Intermarriages took place between the Israelites and the Tyrians.^g Each country needed what the other could supply. To the Phœnicians, whose population far exceeded the means of subsistence which their own territory afforded, the wheat and barley of the plains of Galilee and the wine and oil of the hill country of Judah were invaluable;^h while in the fine arts, the Jews, even in the most flourishing time of their monarchy, felt their inferiority to the Phœnicians, to whom David had to apply when he built his palace,ⁱ and Solomon his Temple.^k

^a *Odys.* xv. 416; and comp. Herodotus, I. i.

^b And yet, as Herodotus says (ii. 104), "The Syrians of Palestine themselves confess that they learnt the custom (of circumcision) from the Egyptians." Compare our Lord's statement (*John* vii. 22). "Moses therefore gave you circumcision, not because it is of Moses, but of the fathers."

^c Michaelis, *Hist. Vitri apud Hebræos*, in *Comment. Soc. Regiæ scientiarum Gottingensis*, tom. iv. p. 301.

^d See for instance Kenrick, *op. cit.* 63.

^e *Deut.* xxxiii. 19; with which compare *Gen.* xlix. 13.

^f *1 Kings* v. 1, 7, &c.; ix. 10—14, 26—28; xi. 1—8.

^g *1 Kings* vii. 14; *2 Chron.* ii. 14.

^h *1 Kings* v. 11; *2 Chron.* ii. 10; with which compare *Acts* xii. 10, and Josephus, *Antiq.* viii. 2, 7; see also Kenrick, *op. cit.* 355.

ⁱ *2 Sam.* v. 11; *1 Chron.* xiv. 1.

^k *1 Kings* v.; *1 Kings* vii; *1 Chron.* xxii. 4.

d. Celtic. How early the Celts, in Western Europe, made that opaque glass we find in the most ancient interments of the bronze period, and of which we have many specimens in our museums, it is impossible to say; but that they did make it for themselves, and not receive it only in barter from other nations, there seems good reason to believe.^a

B.—TRANSLUCENT, OR HORNY GLASS.

1. *Ancient Type.*

a. Phœnician. Though the earliest-known glass was the opaque Egyptian, the Egyptians do not appear to have been the first to manufacture a better material. The Phœnicians were the busiest, wealthiest, and most energetically active and progressive people of the ancient world. If they learnt from others, their untiring energy and happy genius turned it at once to practical account, and improved upon it. Thus, in the matter of writing, though the Egyptians, upwards of 2,500 years before our era, were in possession of the germ of the alphabetic system in the hieroglyphic and hieratic, the Phœnicians were the first, much later, to seize and make practical the idea of a simple and regular alphabet.^b At an earlier period than that of which we are now speaking, "filled with wisdom and understanding and cunning to work all works in brass,"^c "gold, silver, and iron,"^d they appear to have been the first to perfect also the sister art of making and working glass. The forests of Lebanon furnished them an inexhaustible supply of fuel and of ash, and the neighbouring shore with sand of such excellent quality that, many centuries afterwards, it was exported to other countries for making glass.^e The vases already mentioned, though substantially the same as regards shape and style of ornamentation for several centuries, yet continually, and progressively, through that period, altered as regards the material of which they were made. At first, as we have seen, the glass was opaque throughout, material and ornament alike. Afterwards the ground was of translucent or horny (not yet transparent or crystalline) glass, and the pattern opaque; later still, both the ground and pattern were of translucent glass; last of all, both ground and pattern were of transparent glass. The vases of the second and third

^a Thurnam, *Ancient British Barrows*, Archæologia, XLIII. 499.

^b Rawlinson, *Herodotus*, App. bk. II. ch. v. p. 317.

^c 1 Kings vii. 14.

^d 2 Chron. ii. 7.

^e Strabo, *Geog.* lib. xvi. cap. ii. sec. 25; Josephus, *Bel. Jud.* ii. 9.

periods are of extreme interest, as showing the overlapping of the opaque and translucent makes and gradual substitution of the latter for the former.

b. Egyptian. In accordance with that stationary, unprogressive character which was so remarkable in the Egyptians, we do not find them in possession of the art of making the kind of glass now under consideration until the seventh century B.C.^a; the bottles of green translucent glass from Memphis, in the British Museum, the earliest known, being of the age of Psamaticus, monarch of the twenty-sixth dynasty (B.C. 664—610).

c. Jewish. Of this we know nothing, but we conjecture that in every country where glass has been manufactured, beginning with the opaque type, this intermediate form must have been made for a longer or shorter period.

d. Celtic. That the Celts had a translucent glass, intermediate in texture between their earliest opaque glass and the crystalline glass they made in the time of Pliny,^b is proved by the beads of this kind of glass found with Celtic interments.

C. TRANSPARENT, OR CRYSTALLINE GLASS.

1. *Ancient Type.*

a. Phœnician. That, at last, the Phœnicians made vases throughout of crystalline glass, has been already noticed. Their skill excited the wonder of the ancients. Herodotus^c mentions two columns in the temple of Hercules at Tyre, one of gold, and the other of emerald, "shining brightly in the night," the latter being referred to also by Theophrastus,^d and, much later, by Pliny,^e who does not understand at all how an emerald could be so large, without however disputing

^a The only arguments with which I am acquainted in favour of an earlier existence of translucent glass among the Egyptians are as follows: 1. It is said that bottles containing red wine are represented in some of the earliest paintings; and it has been inferred hence that the glass of which they consisted must have been transparent. This, however, does not by any means follow; since wine could scarcely have been represented in an opaque bottle without making the bottle appear transparent, whether it were actually so or not. 2. A bead of circa B.C. 1450, mentioned by Sir J. G. Wilkinson, described by some as "transparent," was formerly believed to be glass. This, however, is now considered by Professor Maskelyne to be obsidian.

^b *Nat. Hist.* xxxvi. 66.

^c Herodotus, ii. 44. It is scarcely worth while to refer to the mirrors (probably of Phœnician origin) mentioned by Isaiah (iii. 23), because it is impossible to ascertain from the Hebrew text whether they were of glass or metal, or if glass, of what kind.

^d *De Lapidibus*, pp. 395, 396.

^e *Op. cit.* xxxvii. 5.

the fact. It must have been glass, of a marvellously perfect texture, like the (probably) similar hollow columns of green glass at Gades, in which lamps were kept perpetually burning; ^a the columns of glass in the temple of Aradus; ^b the emerald (of unknown origin), six feet long and four and a-half feet broad, presented by a king of Babylon to an Egyptian Pharaoh; ^c the obelisk in the temple of Jupiter (in Egypt), which was sixty feet high, and from three to six feet broad, composed of four emeralds; ^d the statue of Serapis, in the Egyptian labyrinth, thirteen and a-half feet high, of one entire emerald; ^e and the like. To the skill of the Sidonians, *in times past*, Pliny specially refers. He says that they first invented looking-glasses. And in the British Museum are a number of small bottles of clear glass of various forms, blown in moulds, "which have been chiefly found in Syria, and the neighbouring islands. The specimens are in the shapes of dates, grapes, heads, &c. A handle, once forming part of a small cup, is stamped with the signature of its maker, Artas the Sidonian, in Greek and Latin letters." ^f There are also, in the Slade collection, a jug of moulded glass with vases and musical instruments in relief, from the Greek Archipelago, and a moulded bottle imitating basket-work, believed to have been made at Sidon. These beautiful objects are, however, of comparatively late date, and we have not, unfortunately, any specimens of the earliest Phœnician clear glass except the vases, the date of which is probably not later than the eighth century B.C.

b. Assyrian. The Assyrians were powerful rivals of the Phœnicians in mental power and taste, in artistic genius and multiform ingenuity, as well as in the common arts and appliances of life; excelling not only the Egyptians, but, as a high authority thinks, even all the orientals. ^g It can hardly be doubted that the glass they used was manufactured by themselves, and not imported from abroad. ^h There is a well-known example, actually bearing the name of Sargon, King of Assyria, circ. B.C. 721, in the British Museum. It is of an exquisite sea-geen

^a Kenrick, *op. cit.*

^b *Clementine Recognitions*, vii. 12.

^c Theophrastus, cited by Pliny, *op. cit.* xxxvii. 5.

^d Same writer, cited by same, *loc. cit.*

^e Apion, surnamed Plistonices, cited by Pliny, *op. cit.* xxxvii. 5.

^f Franks, *op. cit.* p. 118.

^g Rawlinson, *Ancient Monarchies*, i. 308, 309, 347, 500.

^h The question is argued, with much learning, by Rawlinson, *op. cit.* ii. 535, and *Herodotus*, App. book i. essay vii.

tint, and admirable manufacture, as, indeed, are all the specimens that have been brought from Nimroud.

c. Babylonian. The glass found in large quantity in Babylonia,^a and of which there are several specimens in the British Museum, is also believed to have been made there;^b and that such glass was made under the Median rule is not improbable, though hitherto the excavations have been too slight and inadequate to substantiate this with certainty.

d. Persian. It is probable also that Persia, which on starting into life succeeded to the inheritance of the Chaldean, Assyrian, Median, and Babylonian civilizations,^c from the first made a transparent glass.

e. Jewish. If the Hebrew word (Job xxviii. 17), like the Greek *υαλος*, literally signifying any transparent substance, really means glass, as many excellent scholars have thought it does,^d then the Jews must also at a very early period have been acquainted with transparent glass; otherwise they would probably become acquainted with the art during the Captivity.

f. Egyptian. As with the Phœnicians, so with the Egyptians, the manufacture of horny glass was merely transitional. In both cases we find it soon replaced by the crystalline type. Whether the Egyptians of themselves excogitated the means of making the latter, or learned it from the Phœnicians or Assyrians, it is not possible to say; but the intercourse and relationship of Egypt with Phœnicia and Assyria were direct and intimate. The Phœnicians had a settlement at Memphis;^e and, after the time of Sargon, close resemblances between Assyrian and Egyptian art are met with, the result, as Mr. Rawlinson believes, either of Egyptian artificers working under Assyrian influence, or of Assyrian artificers working under Egyptian influence.^f Any improvements in the art of making glass known to the Assyrians could thus scarcely have been concealed from the Egyptians.

^a Layard, *Nineveh and Babylon*, pp. 503, 507; Rich, *First Memoir*, p. 29; Ker Porter, *Travels*, ii. 392.

^b Rawlinson, *op. cit.* iii. 413.

^c Rawlinson, *Herodotus*, Introd. ch. ii. p. 59.

^d Gesenius, a high authority, thinks it does, and refers to Michaelis, in *Comment. Soc. Gotting.* and Hambergeri, *Hist. Vitri ex antiquitate eruta*, *ibid.* See also Dr. J. R. Beard, in Kitto, *Cyclop. Bibl. Lit.* s. v. Glass.

^e Kenrick, *op. cit.* p. 201.

^f The question is discussed, with great learning, in *Ancient Monarchies*, i. 459, 460.

g. Greek. It was probably through their intercourse with the Phœnicians, the more early civilised of the two nations, that the Greeks learned the art of making glass; crystalline, in their case, from the first. "The extensive early commerce of the Phœnicians with Greece is frequently alluded to by Homer, and is further shown by the remarkable fact of the abundance of Semitic or Phœnician words in Greek for such things as precious stones, fine garments, vessels, spices, and eastern plants in general, musical instruments, weights, and measures, &c."^a Herodotus says distinctly that the Phœnicians taught the Greeks a variety of arts, and amongst them that of writing, the knowledge of which they did not previously possess.^b The Greek mythology also very closely resembled the Phœnician,^c and it is acknowledged by Herodotus that Phœnicia and Egypt were the native countries of the gods of Greece.^d Sir Gardner Wilkinson states that nearly all the names of the Greek divinities came from Egypt,^e and that the Greeks also borrowed from the Egyptians several of their religious rites,^f including the use of oracles,^g the Eleusinian mysteries,^h and a festival in honour of Ceres, celebrated in many Greek cities, particularly at Athens.ⁱ Sir Gardner Wilkinson is also of opinion that the idea of the Doric capital was suggested by an Egyptian lotus capital cut down, and illustrates his view by an interesting diagram.^k It is further noteworthy that, at the time when the Egyptians were themselves improving in the art of glass-making, Egypt was opened to Greece in a manner in which it had never been before. "During the whole of his reign (B.C. 664—610), Psamaticus I. maintained a direct intercourse with the Greeks, and established commercial relations with them as well as with the Phœnicians; and so much encouragement was given to foreigners that many settled in Lower Egypt the liberal policy of this monarch continuing to be followed at a subsequent period, particularly by Amasis, who reigned before, and by Nectanebo, who lived after, the Persian invasion."^l But, if the

^a Deutsch. *op. cit.* s. v. *Phœnicia*.

^b Herodotus, v. 58. See also Rawlinson's note to same, and App. book ii. chap. v. pp. 317, 318, &c.

^c Kenrick, *op. cit.* p. 98.

^d Herodotus, ii. 49, 50.

^e *Ancient Egyptians*, 2nd ser. i. 148. "Almost all the names of the gods came into Greece from Egypt. . . . [with certain exceptions]. The other gods have been known from time immemorial in Egypt." Herodotus, ii. 50. See also Sir Gardner Wilkinson's Essay in Rawlinson's *Herodotus*, App. book ii. chap. iii.

^f *Ancient Egyptians*, 2nd ser. i. 168, quoting Herodotus, ii. 51.

^g *Op. cit.* 2nd ser. i. 147; 2nd ser. ii. 320.

^h *Op. cit.* 2nd ser. ii. 320.

ⁱ *Op. cit.* 2nd ser. ii. 320, quoting Herodotus, ii. 171.

^k *Op. cit.* iii. 310.

^l *Op. cit.* i. 156.

Greeks learned many things from the Phœnicians and the Egyptians, they were also much indebted to the Assyrians and Babylonians. They do not seem, however, to have had glass in common use very early, as it is not mentioned in Homer, and Herodotus was evidently not familiarly acquainted with it, as he speaks of the molten stone with which the Egyptians adorned the ears of the sacred crocodiles without apparently understanding its true nature,^a nor did he question that the emerald he saw at Tyre was a real one. The other supposed references to glass in Herodotus^b and Aristophanes^c are not conclusive. The earliest perfectly conclusive reference to glass by a Greek writer is that of Theophrastus, who describes it distinctly, as being made out of the sand of the river Belus.^d The glass from Greece, and that believed to be Greek from Cyprus and Sicily, is usually of a sea-green tint, but beautifully clear and transparent, rich in tone, and otherwise of high technical excellence. There are some interesting specimens in the Slade Collection; one, a cup from Cyprus, inscribed KATAIXAIPE KAI ETΦPAAINOT; with others from Calymnos, Cyprus, Melos, Thera, &c.

h. Roman. If crystalline glass were not previously known in Italy, it must have become so after that intercourse of the Romans with Greece which ended in its final conquest. Virgil compares the clearness of the Fucine lake to glass;^e and Horace, using it as a standard of comparison for clearness, shows to what perfection its manufacture had attained.^f Pliny compares some of the glass of his time to crystal, and it is evident that it was esteemed in proportion as it resembled crystal in colourlessness and brilliance.^g He specially refers to the care employed in selecting sand;^h and Strabo,ⁱ to the discoveries made at Rome, both with

^a Herodotus, ii. 69.

^b Herodotus (iii. 24), speaking of the embalmed Ethiopians, says they were put in glass (βάλος), but, from the context, this must have been talc, or lapis specularis.

^c *Nubes*, Act 2, sc. i. A stone beautiful and transparent is mentioned, used to kindle fire; but this may have been rock crystal.

^d That used by the Phœnicians. The river was supposed to spring from the lake of Cendevia, at the foot of Mount Carmel, between Phœnicia and Judæa, emptying itself into the sea near Ptolemais. Pliny, *op. cit.* xxxvi. 26.

^e

“ . . . Vitreâ te Fucinus undâ
Te liquidi flevire lacus.” *Æneid*, vii. 759.

^f “Perlucidior vitro.” *Carm.* ii. Ode 2.

“Splendidior vitro.” *Carm.* iii. Ode 3.

^g *Op. cit.* xxxvi. 67. “Maximus tamen honos in candido translucentibus, quam proxima crystalli similitudine.”

^h *Op. cit.* xxxvi. 66.

ⁱ *Lib.* xvi. cap. ii. sec. 25.

regard to colouring and mode of working, especially in the kinds of glass resembling crystal. Magnificent specimens abound in every collection, so that we need only mention here such masterpieces as the Auldjo, Museo Borbonico, and Portland vases, all of the most exquisite texture; the last so fine that Breval believed it to be chalcedony; Bartoli, Montfaucon, and other antiquaries, sardonyx; Count Tetzi, amethyst; and De la Chausse, agate.^a Pliny says, indeed, the Romans imitated precious stones in such a manner that it was extremely difficult to distinguish false stones from true, the opal,^b carbuncle,^c jasper,^d hyacinth, sapphire, and all coloured stones.^e Under the fostering care of Rome, the ancient Phœnician and Egyptian glass-works flourished; Alexandria especially, the most wealthy and splendid city in the world, was famed for its glass, with which Rome continued to be supplied long after Egypt became a province of the Empire.^f Some vases presented by an Egyptian priest to the Emperor Hadrian were considered so curious and valuable that they were only used on grand occasions.^g As specimens of late Roman crystal glass, of the most complete limpidity, the discs found in the catacombs, attributed by Padre Garrucci to the period between A.D. 200 and A.D. 400, are remarkable. There are several specimens of these curious relics in the British Museum; also one, of similar character, found near the church of St. Ursula, at Cologne.

i. *Celtic*. Pliny, having described the processes of the Romans for obtaining "vitrum purum, ac massa vitri candidi," adds—"Jam vero per Gallias Hispanias-que simili modo arenæ temperantur."^h Thus, under the fostering influence of Rome, the manufacture of glass in these countries also was brought to comparative perfection.

k. *Early Teutonic (Anglo-Saxon)*. A part of the early Teutonic glass was similarly essentially Roman in character. From the immense amount of Roman glass continually discovered, all of excellent workmanship, it can hardly be doubted

^a Apsley Pellatt, *Curiosities of Glass-making*, p. 20. The date of this marvellous vase is uncertain, but it was found in a sarcophagus, believed to be that of the Emperor Alexander Severus, killed A.D. 325.

^b *Op. cit.* xxxvii. 22.

^c *Id.* 26.

^d *Id.* 37.

^e *Id.* xxxvi. 67. See also xxxvii. 65, 66, for more respecting counterfeit stones and how to distinguish them; and Sir Gardner Wilkinson, *op. cit.* iii. 93.

^f Sir Gardner Wilkinson, *op. cit.* iii. 92. For an interesting reference to the Alexandrian glass-works, see Strabo, xvi. ii. 25.

^g Sir Gardner Wilkinson, *op. cit.* iii. 93, quoting Vopiscus, *Vita Saturnini*, c. 8.

^h *Op. cit.* xxxvi. 66.

that the Romans established manufactories in their various colonies.^a Their successors copied the Roman methods as closely as they were able; and there are many specimens of early Anglo-Saxon glass in the British Museum and elsewhere, almost indistinguishable from Roman in appearance or texture, however much they may differ in form and ornamentation. The Merovingian glass found in France has much the same character, judging from fragments that I have seen.

B. TRANSLUCENT, HORNY, OR INTERMEDIATE GLASS.

2. *Medieval Type.*

a. Early Teutonic (German). The medieval type of horny glass was not a lineal descendant of its ancient predecessor, but arose, in the first instance, from a less successful imitation of Roman glass by the early Teutonic settlers than that we have just referred to. The glass in the British Museum from the Teutonic cemetery at Selzen^b is far inferior to that obtained from Saxon interments in our own country, and, as compared with Roman glass, is less transparent and of coarser texture, besides being rude in manufacture, and prone to decay. The difference was as obvious to contemporary writers as to ourselves. S. Isidore of Seville, A.D. 570—636, speaks of the ancient fabrics of Gaul and Spain as of an extinct manufacture. "*Olim fiebat,*" he says, "*et in Italia et per Gallias et Hispaniam . . . vitrum purum et candidum.*"^c

b. Gothic. As what was at first a timid imitation of Roman architecture, gradually gaining strength and power of independent development, became what we call Gothic, so the preceding at first feeble and imperfect imitation of Roman glasswork eventually developed into a genuine Romance expression, and was generally adopted in England, France, Germany, Italy, and Spain. In texture and quality it reminds us of the transitional Phœnician and Egyptian already described; but, whereas the latter was a purely transitional material, quickly emerged from, the Gothic harmonized with all the rest of Gothic art, and was deliberately persevered in for a thousand years; not altering essentially as regards texture, though, as regards accommodation of texture to colour, there was an unceasing development, and the glass of each country had a peculiar character of its own.

Little is known of the progress or development of the art in England during the middle ages. We know, however, that glass-makers were introduced from

^a On the supposed discovery of a Roman glass manufactory near Brighton, by Dr. Guest, see Wright, *Celt, Roman, and Saxon*, 1861, p. 229; and on similar remains in France, Peligot, *Le Verre*, 329, 330.

^b See Lindenschmit, *Das Germanische Todtenlager bei Selzen*, Mainz. 1848.

^c *Etymologiarum*, xvi. 15.

Gaul by Benedict Biscop, to make glass for his monasteries at Wearmouth and Jarrow, about A.D. 678.^a Robert le Verrer, in 1295, and Matthew le Verrer in 1300, were principal inhabitants of the city of Colchester, and taxed for their stock in trade;^b the neighbouring coast in all probability supplied them with sand, the plants which grew upon the adjacent salt-marshes with ashes, and the forest with wood. And that window glass was afterwards made is clear from the contract between the executors of Richard, Earl of Warwick, and John Prudde, of Westminster, 23 June, 25 Hen. VI., for the glazing of the Beauchamp chapel at Warwick, in which it is specially provided that "glasse from beyond the seas" shall alone be used, and "no glasse of England."^c When comparing hereafter the composition and texture of the different makes of glass, we shall have to consider Gothic glass more in detail.

C. CLEAR, FINE, OR CRYSTALLINE GLASS.

2. *Medieval Type.*

a. Persian. Though, throughout the Middle Ages, glass of a horny and technically inferior quality was thus exclusively manufactured in Western Europe, the art of making clear or crystalline glass was never lost in the East. Benjamin of Tudela, in his Travels in the twelfth century, states that the Sinjar of Persia had put the (supposed) body of the Prophet Daniel in a coffin of glass; and from the context it appears that the glass was transparent. Specimens of early Persian glass are, however, extremely rare. The cup of Chosroes I., as late as A.D. 531—579, in the Bibliothèque Nationale at Paris, is composed of small medallions of rock crystal and fine glass set in gold;^d nor is there any proof, so far as I am aware, that the glass was actually made in Persia. The specimens of Persian glass in our museums, on the other hand, though authentic, are for the most part of comparatively late date (seventeenth or eighteenth century), and Chardin tells us that the art of making glass was introduced into Shiraz by an Italian, about eighty years before his time; that is, at the end of the 16th century.^e

b. Saracenic. The conquest of Phœnicia by the Persians did not affect her glass manufactories, which continued in full activity.^f It was the policy of

^a Bede, *Hist. Abbatum Wiremuth et Gyrensiensium*, Smith's edit. 295. 3.

^b Rot. Parl. i. 228, cited by A. Nesbitt, F.S.A., Slade Cat. Introd. p. xxxii.

^c Dugdale, *Antiq. Warwickshire*, edit. 1656.

^d Engraved in De Linas, *Orfèvrerie cloisonnée*, Paris, 1877, tom i. pl. v. *bis*.

^e *Voyage en Perse*, Amst. 1711, t. iv. p. 258.

^f Kenrick, *Phœnicia*, 395.

Cyrus she should remain practically independent ; as it was, for similar motives, that the Jews should be permitted to return to Palestine. Nor was Phœnicia affected, in this respect, by her subsequent subjugation either to the Greeks or Romans.^a Still later, under the tolerant and enlightened sway of the caliphs, her civilization suffered no decline.^b Under the same dominion, also, the Alexandrian works, so famous in antiquity, continued to flourish. And that fine glass was known to the Saracens, even in Arabia, in the sixth century A.D., is clear from the Koran,^c which relates how Solomon deceived the Queen of Sheba by showing her the glass under his throne, which she (being unacquainted with anything of the kind) mistook for water. We have, in our museums, inscribed weights or tokens of Saracenic glass, dating from the tenth century downward. But by far the most extraordinary specimens of this kind of glass are the large enameled lamps for suspension in mosques, which are of the finest material, and almost entirely colourless. Three of these, in the British Museum, are known, from the names inscribed upon them, to be of the fourteenth century ; two others are evidently of the same date, and some vases may be still earlier ; in the collection at South Kensington there are three more lamps, also of the fourteenth century. The celebrated "Luck of Eden Hall" is believed also to be Saracenic, and one of the cups in the treasury of S. Mark's, at Venice, bears an Arabic inscription. No such glass being made in Western Europe during the Middle Ages, articles of Saracenic glass which found their way thither were greatly prized. They were usually classed in value with goldsmith's work, and in inventories, as M. Labarte has pointed out, the description of them is usually accompanied by some expression indicative of their oriental origin. It was not until after the year 1516, when Syria was conquered by the Turks, that the prosperity and enterprise of the representatives and descendants of the ancient Phœnicians were finally extinguished.^d They are generally called Glass of Damascus,^e and not improbably were so.

c. Jewish. From the travels of Benjamin of Tudela, in the year 1173, it would seem that some of the Syrian manufactories were worked at Antioch by Jews, since he says that he found there—"ten Jews that were makers of glass," and

^a On the flourishing condition of the Sidonian glass-works under the Romans, in the first century A.D., see Pliny, *loc. cit.*

^b Kenrick, *op. cit.* 444.

^c Surah, xxvii. quoted by Michaelis, *op. cit.* § 10, p. 333.

^d Kenrick, *op. cit.* p. 444.

^e Several references to French inventories are given by Labarte, *Hist. des Arts Industriels au Moyen Age*, v. 538.

at Tyre—other “makers of the good and well-known Tyrian glass that is esteemed in all lands.”^a He also mentions a wall of glass at the synagogue called the Gomah of Damascus. The Jews appear indeed to have been expert glass-blowers in several countries during the Middle Ages, amongst other accomplishments imitating precious stones, which implies not only a high general knowledge of glass-work, but a special knowledge also of the use of lead, with which the Jews would seem to have been familiar at an early period, since Heraclius makes use of the expression “plumbeum vitrum, Judeum scilicet.”^b

d. *Byzantine*. During the awful and widespread desolation occasioned by the overthrow of the Roman Empire, in the fourth, fifth, sixth, and seventh centuries, Constantinople remained a shelter for the art of making crystalline glass. It is probable that glass-makers were there from the first, established by Constantine at the foundation of the city, but, whether this be so or not, it cannot be doubted that soon after the art was practised extensively, one of the gates leading to the port taking its name from the adjacent quarter in which the glass-works were situated. The industry was also protected by the Emperors, and by a law of the Theodosian code the glass-makers were exempt from personal taxes.^c That Jewish glass-blowers were settled there as early as the episcopate of Bishop Menas, A.D. 531—565, appears from the account, related by Evagrius,^d of a child being shut up by his father, a Jew, “in clibanum ardentem in quo vitrum formare solebat.” There is also a passage in the writings of Constantine Porphyrogenitus,^e which has been cited^f in connection with this subject. It is an enumeration of presents sent in the year 935 by the Emperor Lecapenus to Hugh, King of Italy, in which vessels of glass^g are mentioned together with cups of agate and onyx; but it cannot be said with confidence, I think, that the glass was necessarily made at Constantinople. Two bowls in the British Museum, one of them bearing a Greek inscription, are however believed to be early Byzantine; and in the Treasury of S. Mark’s at Venice are some glass vessels, one of them bearing a Greek inscription on the mounting, and decorated similarly to other

^a Confirmed by Edrisi, i. 349, who states that both very fine glass and earthenware were made there.

^b *De Coloribus*, iii. 49. As Theophilus, whose work is thought to belong to the tenth or eleventh century, mentions Heraclius, and the latter cites Isidore of Seville, who lived in the seventh century, the treatise of Heraclius must be placed between those two dates.

^c Labarte, *Hist. des Arts Industriels au Moyen Age*, edit. 1866, iv. 538.

^d *Hist. Ecclesiast.* iv. 35. The account is repeated by Gregory of Tours, *De Gloria Martyrum*, i. 10.

^e *De Ceremoniis Aulae Byzantinae*, ii. 44, edit. Reiskii, i. 661.

^f Labarte, *op. cit.* 539.

^g ὑέλια κλεοπρ. The Editor has translated this, as he says—“ut aliquid darem non prorsus alienum,” *vitra Heliopolitana*; but confesses that it is impossible to be certain as to the meaning of the manuscript.

known objects of Byzantine art, believed to be part of the plunder of Constantinople in 1204, and with the *Sacro Catino* at Genoa, and Theodolinda's cup at Monza, to be most probably of Byzantine manufacture. I have also in my own possession a piece of perfectly clear and transparent ancient glass from the Mosque of S. Sophia at Constantinople (Ex. 87). These are confessedly scanty and imperfect historical details, but they at least confirm the impression that the Greek glass of the lower Empire was lineally descended from the ancient Greek and Roman, and substantially of the same quality. Theophilus, writing as is supposed in the twelfth century, says more expressly that the Greeks of his time made glass very clear, like crystal, "*Vitrum clarissimum, velut crystallum . . . vitrum lucidissimum*," and describes, at considerable length, their methods of gilding and colouring it.^a It is however beyond the scope of this essay to refer to these further than to say that they imply great knowledge and skill in the art, far in advance of anything else of the kind practised in Europe after the time of the Romans, until the Venetians, subsequently, surpassed in technical ability all who had gone before them.

e. Venetian. It is not impossible that when Venice sprang into existence in the fifth century, through the inhabitants of ancient Venetia flying for fear of the Huns for shelter to the small islands of the Hadriatic, they may have taken with them a knowledge of which they can scarcely have been ignorant at home—that home termed by Cicero—"Flos Italiae, et ornamentum Populi Romani."^b This knowledge may have been advanced from various sources. We find Venetian merchants trading at Alexandria in the early part of the ninth century,^c and in the latter part of the tenth, Pietro Orseoli, Doge, entering into negotiations for the establishment of a regular commerce with Barbary, Egypt, Syria, and Tartary, and making treaties with the petty princes of Cairo, Medina, Damascus, and Tunis.^d The intercourse of Venice with Egypt and Syria was thus established at an early period. In the year 1122 the Doge Michael of Venice undertook to assist Baldwin, King of Jerusalem, to take Tyre, on condition that, if successful, he should receive annually three hundred bezants, and possess a third part of the city.^e The city was taken,^f and the Venetians were still established there, in the enjoyment of their share of it, in the year

^a *Diversarum Artium Schedula*, ii. 13, 14, 15, 16.

^b See also Cæsar, *De Bello Gallico*, iii. 13; and Strabo, i. 195.

^c Giustiniani, *De Translatione*, etc. lib. 2; Michieli, *Feste Veneziane*, i. pp. 96-100; Andreae Danduli *Chronicon*, viii. i. 27; Navagero, *Storia della Republ. Venez.* ann. 819.

^d Hazlitt, *Hist. of Venice*, i. 183, 247, 324, 331; ii. 23, 99.

^e And. Danduli, *Chron.* ix. xii. 10.

^f *Id. id.* 11.

1275.^a They must therefore have been well acquainted with the "makers of the good and well-known Tyrian glass that is esteemed in all lands," whom Tudela visited in 1173. But, probably quite as early as with Egypt and Syria, the Venetians traded with Constantinople. There is incontestable evidence that they went there as early as A.D. 800, and towards the close of the following century they had established a regular commerce. It is further to be remarked that, from an early period, the relations between the Republic and the Byzantine Court were of the closest intimacy, and of the friendliest character.^b It has been thought probable therefore that, as in architecture the early Venetians built under Byzantine influence, so they may have advanced this art under a like influence. Filiasi^c says expressly that such was the case, and thinks that in the first instance glass was not *made* but only *worked* by the Venetians, referring to ancient records in support of that view, and especially to a law of the Marine Code as late even as the year 1255, which permitted *vitrum in massa et rudus* to be put on board ships as ballast. He thinks the imported masses of glass were brought from the Greek empire. Heraclius appears to refer to such masses of unworked glass as though he were familiar with them.^d Be this as it may, however, the taking of Constantinople in 1204 undoubtedly discovered to the utmost all that the Greeks were able to teach the Venetians, besides to some extent supplying the latter both with workmen and materials.^e The glass-works were carefully inspected by agents of the Republic, and Greek workmen were

^a And. Danduli, x. viii. 10, note (ann. 1275).

^b Hazlitt, *op. cit.* i. 62, 311, 323, and *passim*.

^c *Ricerche Storico-critiche*, etc. 187. See also p. 183, where he says the Venetians learned the art of making mirrors from the Greeks, citing Muratori, *Dissertationes Ital.* tom ii.

^d "... Massaeque fiunt. Postea ex massis rursus funditur in officinis, etc." *De Coloribus*, etc. iii. 5.

^e Bacon, in a passage I do not remember to have seen quoted, says that the ashes of an herb, called by the Arabs *Kall* (*kali*), growing in the desert between Alexandria and Rosetta, were compressed into masses like stones, and sold to the Venetians for making glass (*Nat. Hist.* viii. 770). His authority was probably Sandys, who travelled in 1610, and says—"In the desert between Alexandria and Cairo is a weed called *Kali* by the Arabs, which they use for fuel and sell the ashes, crushed together like a stone, in great quantity to the Venetians, who, equally mixing the same with the stone brought from Pavia by the Ticino, make thereof their crystalline glass." Neri, who gives much information on the materials used by the Venetians, says (1612) the alkali brought from Syria or the Levant was called *Rochetta*, and was the ash of a plant which grew there in abundance. It was elaborately purified before use; and the greatest care also was taken in the choice of a pure form of silica. *Al-kilyn* is described in Kazimirski's Arabic Lexicon as "Cendres des plantes alcalines;" derived from the verb *Kalai* to burn; *Kalah*, in Hebrew, is to burn, roast, parch; hence *Kali*, roasted or parched grain (Lev. xxiii. 14; Ruth ii. 14).

carried off to Venice.^a Formaleoni^b states that glass-works for crystal, for glass painted in all colours, and for such as was ornamented in every kind of manufacture, were established in Venice as early as the beginning of the thirteenth century; and that amongst the manuscripts of the Cavaliere Giacomo Nani there existed, in his time, a perfect treatise on the art of glass-making, written about the middle of the thirteenth century. That in the year 1268 the glass-blowers were already incorporated as a Company, is clear from their having officially joined in the procession of trades on the occasion of the coronation of Lorenzo Tiepolo in that year;^c and from the wording of a decree which passed the legislature on the 17th October, 1276,^d as Mr. Hazlitt remarks, the two-fold inference may be drawn that the manufacture was at that time in a flourishing condition, and that the Republic felt anxious to convert it, as far as practicable, into a monopoly. It would seem that at first the various works were allowed to be placed in any part of the city, which was in consequence frequently exposed to disastrous fires. In the year 1297, however, a law was issued for prohibiting furnaces in the Rialto.^e This does not appear to have taken practical effect at once, for in 1321 Filiasio Polino still possessed property of that kind near the monastery of St. Gregory;^f still, after the beginning of the fourteenth century, the works, previously in various situations, began to be collected at Murano, which shortly afterwards became covered with glass-works, and was for the future the exclusive seat of the manufacture. Sabellico, writing at the beginning of the sixteenth century, says that at that time the island was a wonder for the crystal cups, decanters, wine-glasses, basins, jugs, chandeliers, ornaments, chains, necklaces, bracelets, etc., which were made there; there being further no kind of precious stone that was not imitated, animals of every kind, balls containing flowers as beautiful as those which spring scatters over the fields; and, in fact, whatever could delight the eye of mortal, or that a living being could dare to hope for.^g Two annual fairs were held, at which these various articles were exposed for sale,^h and Venice supplied the markets of the world, as Phœnicia had done before her.

^a Carlo Marino, *Storia civile e politica del Commercio de' Veneziani*, i. ii. 213; v. ii. 258; and Filiasi, *Saggio sull' Antico Commercio de' Veneziani*, II. vi. 147.

^b *Storia filosofica, etc.* ii. 35, 36.

^c "Noi vi abbiamo contato dei maestri barbieri ed appresso vi conteremo dei maestri vetrai, quelli che fanno i lavori ed i lavorietti di vetro." Da Canale, *Cronaca Veneta*, cclxxxi. ann. 1268.

^d "Captum, quod de cetero Vitreum, Alumen, Sablonum, seu alia, de quibus vitreum fieri debeat, non possint portari extra terram, nec de eis possit fieri sigillum sine licentia data à Duce, et Consilio Majore, sub poena perdendi ea quae portarentur." Danduli, *Chron.* X. ix.

^e Filiasi, *Ricerche, etc.* 187.

^f *Id. id.*

^g Cocci Sabellici, *De Venetae Urbis Situ*, lib. 3.

^h Filiasi, *Ricerche, etc.* 189. "Atqui omnium gentium haec oculis maritima subicere negotia." Sabellici *op. cit.*

3. *Modern Type.*

a. Venetian. As Roman glass was the link between the glass of the ancients and that of the Middle Ages, so Venetian glass was the link between the glass of the Middle Ages and that of our own times. We have seen that as early as the thirteenth century the Venetian government watched the art with jealous care, and prohibited the export of ingredients for making glass. On the 27th of October, 1547, the Council itself undertook to watch over the manufactories in order to prevent the art being made known abroad.^a By a subsequent Act, a workman transporting his art to a foreign country, and persisting, was to be put to death by an emissary commissioned for the purpose. But these severe enactments were fruitless. The Republic had little real power either to support or protect her arts whilst she herself was struggling for existence; and her ultimate fall was accompanied by an interruption of trade and decay of manufacture favourable to the enterprise of other countries, which had long looked on her with jealousy and envy.

b. Austrian. In the year 1486 Nicholas Welche received authority from the Council of State to make glass "after the fashion of Venice." His works at Vienna were still going in 1563, and others were constructed at Veidlingan, near Vienna, for making glass "in the Italian way," in the reign of the Emperor Ferdinand I.^b

c. Bohemian. Glass-making, long previously practised in Bohemia, was remodelled after the Venetian method about the same time as it was in Austria,^c her vast forests supplying at once both fuel and ash; her rocks, an inexhaustible supply of the purest quartz and lime; and her population a practically unlimited amount of manual labour; advantages which long ago secured to Bohemia that superiority which, in some respects, no other country has ever been able to attain. It was in Bohemia, however, about the beginning of the seventeenth century,^d that the pernicious pseudo-art of engraving and cutting, in imitation of crystal, originated. This was a retrograde step, the material of itself being capable, as the Venetians had already taught us, of the most artistic treatment, without imitating a treatment belonging to another substance and foreign to its own nature.

^a Bussolin, *Guida alle fabbriche di Murano*, 1842, p. 62.

^b Peligot, *Le Verre*, p. 342.

^c *Id.* 343.

^d *Id.* 344, Labarte, *op. cit.* 1875, iii. 396.

d. German. In Germany the art was established before the middle of the sixteenth century. The oldest authentic example in existence is preserved in the Art Museum at Berlin,^a and is dated 1553; the oldest in the British Museum is dated 1571. The early examples were usually decorated in a characteristic manner with enamel colours; the paintings, towards the middle of the seventeenth century, being comparable in execution with the most delicate paintings on glass of the second half of the sixteenth century. Towards the end of the century, however, painting was entirely discarded in favour of the new fashion of cutting and engraving, the utmost endeavour at the same time being made to produce a material as closely as possible resembling crystal.^b

e. Swiss. The establishment of the new art in Switzerland took place about the same time as in Germany, if we may take the beautiful circles of Swiss window-glass, of the middle of the sixteenth century, as being of home manufacture.

f. French. In France, about the middle of the sixteenth century, Henry II. brought over an Italian named Theseo Mutio, and established him at Saint Germain-en-Laye; and others shortly after arrived to teach the Venetian method.^c

g. English. Stow tells us that "the first making of Venice glasses in England began at the Crotchet Friars (*crutched* or *crossed* Friars, *Fratres sanctae crucis*, their hall being made into a glass-house in 1557),^d in London, about the beginning of the reign of Queen Elizabeth, by one Jacob Vessaline, an Italian." In 1567 Anthony Dollyne and John Carye obtained a patent for making glass in England, and contracted with "Thomas and Balthazar de Hamezel, esquires, dwelling at the glass-houses of Vosges, in the countrie of Lorraine," to come into England, make glass, and *teach the art* to Englishmen.^e And in 1580 Hackluyt included in the list of articles wanted for the expedition to Cathay, besides Venice glasses, "glasses of English making."^f In 1619 Sir Robert Mansell brought over specially skilled workmen from Lorraine to his works on the Tyne, whose descendants, the Henzells, Tyzacks, etc., have been settled there

^a Labarte, *op. cit.* iv. 592.

^b Kunckel's translation and notes on Neri and Merret, describing the purest sources of silica and mode of purifying the alkalies, and reviewing all that was then known on the subject, was published at Frankfurt in 1689.

^c Labarte, *op. cit.* iv. 595.

^d Pennant, *London*, 5th edit. p. 377.

^e Hudson Turner, *Domestic Architecture*, i. 76—79, quoting Lansdown MS. No. 59, art. 72 and 76.

^f *Voyages*, edit. 1809, i. 496.

ever since, some of them in the same business ; and in 1635 further introduced the use of pit-coal instead of wood, thus marvellously facilitating fusion, and the thorough incorporation of the various ingredients. A full description of the modern manufacture, thus inaugurated, is contained in Merret's commentary on Neri, published in London in 1662.

h. Flemish. In Flanders the new method was established during the seventeenth century.

i. Dutch. In Holland, about the same time. The Latin translation of Merret's notes on Neri, published at Amsterdam in 1668, gives an engraving of a Dutch furnace, and describes at length all the then known improvements.

k. Swedish. Into Sweden the art was introduced by Germans in the year 1641.^a

III. EFFECT OF DIFFERENCES IN COMPOSITION AND TEXTURE ON THE EXTENT AND MODE OF DECAY.

Nothing is more certain than that glass does not decay spontaneously, by age alone ; than that the different makes of glass are not all equally, under the same circumstances, liable to decay by age ; or than that decay, if produced in different makes of glass, under the same circumstances, is not of the same form. Many of the oldest specimens of Egyptian glass are not perceptibly^b decayed at all. The surface of several of the early Phœnician vases is sound and unbroken. The same remark applies to much of the ancient glass (chiefly in the form of beads) found in the graves of the Bronze period. There is in the Slade collection a whole necklace of small beads from the Island of Melos, all apparently in perfect condition ; and there are several other specimens of glass, from Greece, in the British Museum, apparently unaffected ; that from a tomb in Cyprus, for instance, inscribed—ΚΑΤΑΙΧΑΙΡΕ ΚΑΙ ΕΥΦΡΑΙΝΟΤ. All large collections of Roman glass contain specimens which, at least to the naked eye, are as bright and clear as the day they were made (Ex. 88). Much of the glass found in Anglo-Saxon graves is also perfectly clear, and the Arabian lamps are remarkably so. The Sacro Catino at Genoa is so beautifully clear and transparent that for centuries it was thought to be an emerald ; the so-called Theodolinda's cup at Monza, for the same reason for centuries was believed to be a sapphire ; and in the treasures of many other foreign churches are like cups and basins. A panel of painted glass

^a Knapp, *Chemical Technology*, ii. 2.

^b By this word, here and elsewhere, I mean—perceptibly to the naked eye.

at York, of date as early as the end of the twelfth century, is throughout in an advanced state of pitting decay, deep wide excavations extending far into the thickness of the panes, and honey-combing them in all directions; but much of what remains of the Abbé Suger's glass at S. Denis, half a century older still, is scarcely decayed at all.^a The surface of every pane in one panel (Ex. 89) may have decayed away; many panes in another of the same date (Ex. 90) are still beautifully clear. Side by side with panes of glass in the most advanced stages of decay may constantly be seen others, of the same date, of the same manufacture, of the same colour, and in the same window, apparently unaffected. In the British Museum there are some specimens of Roman ornamental glass made by twisting glass of different colours (and presumably of different textures) together, in which the glass of one colour, following the line of the spiral, is extensively decayed, while the rest is, apparently, unaffected. It is only under certain circumstances (hereafter to be considered), therefore, that glass decays; and, if it does decay, the form of decay is found to depend upon the make of the glass affected. Thus the opaque Egyptian, Phœnician, and Celtic, and translucent Phœnician and Egyptian (with such translucent glass as is found in tumuli of late Celtic or early Iron period), are regularly affected by the spotty or pitting form of granular decay; the early Teutonic glass of worse make (Merovingian) by a form of granular decay—especially by the splitting or crackling granular decay; the Gothic of the coarsest kind, by pitting granular decay; Gothic of intermediate quality, by deep-creeping granular; Gothic of best quality, by superficial creeping granular; but Gothic of all kinds, if buried, by splitting or crackling granular decay; while all crystalline glass, of whatever date, whether ancient, medieval, or modern, is subject to the iridescent, filmy, or blistering form of decay only. The ancient Phœnician vases to which we have already referred become extremely interesting and important in connection with this part of the subject. Those which are throughout of opaque glass, and presumably the most ancient, are affected, if at all, uniformly by pitting decay; those, presumably somewhat later, which have the pattern opaque and ground translucent, are likewise affected uniformly by pitting decay; those which, presumably later still, have the pattern opaque or translucent and ground trans-

^a This should be considered by writers who, like M. Peligot (*Le Verre*, p. 55), attribute to natural decay the disappearance of almost all windows anterior to the twelfth century in date. It is extremely rare to find a pane eaten completely through (Ex. 57), and especially so during the earlier centuries, in which the glass was generally extremely thick (Ex. 108).

parent, have the former, if decayed, affected by pitting, and the latter by iridescent decay (as in the instance of twisted Roman glass mentioned above); while those, presumably the latest of all, in which both the pattern and ground are of fine glass, are affected uniformly by iridescent decay. Such is the general principle; and the exceptions which a keen and close attention may discover serve not to shake, but rather to confirm and strengthen it. Thus, traces of filmy decay of a more or less confused and indistinct kind are sometimes found in the midst of granular decay; as in the case of a vase of opaque white glass in the British Museum, from Memphis, which is covered completely, in a most typical and characteristic manner, with pits, but yet shows confused bright iridescence amongst the pits; or as in cases where confusedly filmy decay is mixed up with the characteristic granular decay of Gothic glass (Ex. 78, 79, 80, 81, 82, 83, 84, 85). Or traces of pitting decay may be found in the midst of filmy decay (Ex. 6, 91), as on the lid of a Roman ossuary found in Sardinia, now in the British Museum, where, however, it is to be remarked that the spots themselves are confusedly iridescent. There is also a bottle of Egyptian translucent glass from Memphis, in the British Museum, which has a few small pits upon it, each surrounded by a kind of iridescent halo. Still it remains true that it is as rare to find fine glass of any period showing granular decay, as to find opaque or translucent glass decayed in films; and, in either case, the exceptional form of decay recedes significantly from the normal type. Some examples, which at first sight might seem exceptions, on examination turn out not at all to be so. Thus, in old cottages in Yorkshire, it is not at all uncommon to find quarries of early seventeenth century date showing granular decay (Ex. 92); others, in the South of England, may be found showing the same still more strikingly (Ex. 93); or bottles (Ex. 94, 97) may occasionally be discovered, the decay on which (Ex. 95) is so nearly of the Gothic type as to be very deceiving. Thus, the last example might almost pass for medieval, did we not possess dated examples, of a late period, showing the same kind of decay (Ex. 97). In all these instances the texture of the material is not, as we should have expected from the date, transparent or crystalline, but translucent only, or horny; and the form of decay is, therefore, appropriate. They show, indeed, what we might perhaps almost have expected, that cottage window-glass, and the coarser kinds of bottle-glass, were liable to be made on the Gothic type later than other kinds. Liable, only, I say; because, as matter of fact, there is a preponderance of the new kind of window-glass during the sixteenth and seventeenth centuries, and many bottles showing iridescent decay exist (Ex. 98, 99) of earlier date than the one mentioned above, which is the

latest glass showing granular decay with which we are acquainted. As soon as practicable, crystalline glass superseded, in England as in all other countries, translucent makes. Technically, it (together with the best of the medieval crystalline, which it imitated) was as superior to the ancient crystalline as the various makes of horny were to the opaque, though not quite so superior to the ancient crystalline as the ancient crystalline was to the horny; nor were the opaque makes quite so inferior to the horny as the horny was to the ancient crystalline. Thus both ancient and medieval crystalline glass were more allied to the modern crystalline than to the horny and opaque makes, and the horny makes more to the opaque than to the modern, medieval, or ancient crystalline. The thirty-nine different makes of glass, described above, thus fall under two heads of technical quality, a worse and a better; answering to the two principal forms of decay, granular and filmy. (See Table at the beginning of Section II.) In order to make it understood clearly how, and in what way, and why, the different forms of decay are connected with different makes of glass, we shall have to show—1. That different kinds of glass differ from one another not only in chemical composition, but in mechanical texture. 2. That these differences of composition and texture determine the different forms of decay and disintegration, which are partly chemical, partly mechanical processes. 3. That these changes are due, partly to chemical, partly to mechanical causes.

IV. COMPARISON OF THE DIFFERENT MAKES OF GLASS, AS REGARDS COMPOSITION AND TEXTURE.

It has been stated already that in technical (we have not yet to do with any other kind of) excellence, modern glass is superior to all the rest. Doubtless it is so. Whether we take common crown window-glass as an example, plate, bottle-glass, or the glass used for making lenses for telescopes, microscopes, and other optical instruments, or for chemical and other scientific purposes, the world has never before seen anything like it. As regards chemical composition, its ingredients are the very best, united in the best proportion; and, as regards mechanical texture, it is both fused and blown in the best manner possible, so as to produce the greatest attainable homogeneity, colourlessness, transparency, and stability. With this we are sufficiently familiar; its composition and manufacture are described in every text-book; and the medieval and ancient crystalline resembled it in kind. With the porcellaneous and horny types it is, however, otherwise; but it will be

sufficient if we take Gothic glass, as representing horny glass, for special study, remembering that the porcellaneous makes are allied to it in kind, and that whatever peculiarities of composition or texture are shown to exist in the one, either do exist or are liable to exist, in a grosser and more aggravated form, in the other.

1. Peculiarities of Gothic Glass as regards Composition.

In order to understand the composition of Gothic glass, as shown by analyses, the following peculiarities in its manufacture require to be considered.

a. Potashes. Crude potashes,^a not purified before use,^b and therefore containing not only potash and soda, but lime, magnesia, alumina, silica, and the oxides of iron and manganese, with charcoal and other organic matter left in the ash—produced then as plentifully in Europe as now in America, whence the potash used in modern glass-making is imported—were used in large quantity, in order to make the sand fuse at a low temperature and economize fuel. The ashes of inland plants (which furnish potash), or sea-shore plants (which furnish soda), were used indifferently, as might be most convenient; the difference between potash and soda not being known until, in the year 1736, it was discovered by Duhamel.^c

b. Sand. Instead of white sands carefully selected, washed, and sifted,^d red

^a Of beech-wood, crude and unpurified (Theoph. *Div. Art. Sched.* II. i. 4); of dried grass and fern (Vinc. Bellov. *Spec. Nat.* vii. 78); of fern and beech, two of fern and one of beech (Heraclius, iii. 7). "Who wold wene it possible y^t glasse were made of ferne royts." (*Workes of Sir Thomas More, Knyght*, fol. 1557, p. 126.) "Of the Glass we use, the purest is made of the ashes of Chali or Glasswort, and the coarser or green sort of the ashes of Brake and other plants." (Sir Thomas Brown, *Vulgar Errors*, ii. 3.) "Ashes of Chali or Fearn." (*Id.* ii. 1.) The ashes of fern, which grew abundantly in Tuscany, were also used by the Venetians. (Neri, *op. cit.*, chap. v.) "Aisschen of ferne." Chaucer, *Squyeres Tale*, Pt. I. 246.

^b The potash of commerce is purer than the crude ash, but nevertheless before being used in modern glass-works is purified by dissolving in warm water, and, when cold, drawing off the clear solution, and evaporating to dryness.

^c Gmelin, *Handbuch der Chemie*, Cavendish Soc. Edit. iii. 18, 78, 73.

^d Pliny mentions specially that white sand, "passing soft and tender," was used by the Romans (*Naturall Historie*, Holland's transl. 1601. xxxv. 26). The natural purity of the sands of Murano was one of the secrets of the success of the Venetians. A good idea of the importance attached at present to the purity of this chief ingredient of glass, is that sand has actually been imported for glass-making from New South Wales; and the best sand of the Isle of Wight is not considered fit for use until it has been washed in eight waters, dried or burnt in an oven, and sifted through a lawn sieve (Apsley Pellatt, *op. cit.* p. 36); or quartz-sand is treated with hydrochloric acid, to free it from adhering traces of iron.

or other sands nearest to hand^a were used, strongly impregnated with iron, if not also with lime and alumina, partly because readier to hand, and partly because they fused so much more readily than white.

c. Lime. Instead of lime from the purer calcareous rocks,^b common chalk or lime was used freely as a cheap flux to assist the action of the potashes and make the glass easier to work, a matter of importance in those days when wood fires alone were used.

d. Magnesia. Crude magnesian limestone, containing from forty to fifty per cent. of magnesia, must often indeed, as we learn from analyses, have been used as a source of lime, and thus magnesia in large quantities also found its way into the glass.

e. Alumina. Used now principally in the manufacture of the commoner kinds of bottle-glass. This was added to the mixture for window-glass; chiefly in the form of common clay, containing, besides alumina, silica, iron, carbon, alkalies, and other impurities.^c

f. Manganese. In order to counteract as far as possible the evils arising from the use of such coarse and impure ingredients, manganese was employed in large quantities. Winston is certainly incorrect in stating^d that it was not used in the manufacture of glass earlier than the reign of Elizabeth. Beckman, quite clearly and distinctly, has shown that its use is described by Pliny, and that under the name of *magnesia*, or *magnesia nigra*, its use for cleaning glass (hence

^a Even to this day sand taken from the bed of the Tyne is used at Newcastle (Muspratt, *Applied Chemistry*, ii. 203), probably traditionally representing that first used by the Gallic glass-makers brought over by Benedict Biscop. Theophilus, in the second book of his *Diversarum Artium Schedula*, which is a complete system of glass-making as practised generally in the middle ages, lays no stress whatever on the choice of sand, directing simply that it shall be taken out of water (what water not specified), and *free from earth and stones*. (Tollens . . . *sabuli diligenter de terra et lapidibus purgati, quod de aqua tuleris*, cap. iv). The idea was in fact that any natural substance whatsoever could be made into glass, provided a suitable flux and strong enough heat were applied. "*Vitrum omnium extremum est, ac post judicium quicquid sub firmamentum comprehensum est, omne in vitrum divina ordinatione convertetur.*" (Magistri Joan. Isaaci Hollandi, *Opera Mineralia*, ii. 86.)

^b Common chalk is not pure enough as a source for lime for modern glass, as it contains organic matter, which imparts a brownish tint. Chalk from Dover is sent for even from the north of England (Parnell, *Applied Chemistry*, ii. 27).

^c On the presence of iron, lime, magnesia, and alumina in Gothic glass, see analyses by Müller, in Liebig and Koff's *Annual Report*, iii. 455. Many analyses have shown the presence of iron, lime, and alumina in Roman glass.

^d *Inquiry*, etc. edit. 1867, i. 24.

called *glass-maker's soap*),^a was known to medieval writers; it has been proved by Bontemps^b actually to exist in the Pompeian window-glass; other chemists have found it in Roman fine glass of various kinds, in quantity varying usually from about two to five parts in the thousand; it has been found in early Venetian glass; and I myself have never looked for it in Gothic glass of any date or colour without finding it.^c It had the wonderful property of destroying the dark brown colour which would otherwise have been communicated by the carbonaceous matter in the impure wood ashes, and the dark grass-green tint which would otherwise have been communicated by ferruginous matter in the impure potashes, sand, and clay; oxidizing and thus decolorizing the carbonaceous matter, and, by changing a great part of the protoxide of iron in the sand into sesquioxide, altering its colour from dark green to pale yellow, usually hidden however in earlier glass by the excess of unoxidized protoxide of iron allowed to remain (Ex. 100), unless more of the peroxide of manganese were added, when, the whole of the protoxide of iron being changed into sesquioxide, the glass assumed a yellow cast of depth proportionate to the quantity of iron in the glass (Ex. 101, 102), or more still, when a pink or amethystine tint was communicated (Ex. 103); protoxide of manganese dissolving in the glass without producing any colour, but peroxide (should there be a trace in excess more than the carbon and protoxide of iron in the glass can reduce to the state of protoxide) communicating, under circumstances hereafter to be mentioned, a pink or violet tint.

^a "Le savon du verre." Merret, 1662, sur le chap. xiii. "Savon de Verre." Kunckel's note on ch. ix. of Neri, 1689.

^b *Chemical News*, Aug. 16, 1862.

^c Strabo not improbably refers to the use of manganese when he says that he was told by the glass-makers of Alexandria that there was a certain *βαλινον γην* in Egypt, without which the costlier and better kinds of glass could not be made. (*Geograph.* xvi. ii. 25.) Pliny certainly speaks directly of its use as follows: "Mox, ut est astuta et ingeniosa solertia, non fuit contenta nitrum miscuisse; coeptus addi et magnes lapis; quoniam in se liquorem vitri quoque, ut ferrum, trahere creditur." (*Nat. Hist.* xxxvi. 66.) In early writers there is always confusion between *magnet*, *manganese*, and *magnesia*. The three bodies were indeed believed to be substantially the same; the first, or common kind (*magnet*), attracting iron; the second (*manganese*) attracting glass (out of sand, see Pliny, *supra*); and the third (*magnesia*) attracting flesh (placed dry upon the tongue the last stuck fast to it); in accordance with the view that every material thing in nature had a magnet of its own (if only it could be discovered, which was one of the great problems of the Middle Ages). Manganese and magnet were, moreover, extremely similar in appearance; indeed the two were not finally distinguished until the last century. Which of the three substances is intended, in any given case, can therefore only be ascertained by the context, or circumstances. In this instance we know at once that it was manganese, because neither of the other two substances would

g. The colours used for staining. These were not, like the modern chemicals, studiously "of superior quality,"^a but, like those of the Romans, either natural

produce the effect described. In another passage (*op. cit.* xxxvi. 25), the five then accepted different kinds of magnet are enumerated, one of them only attracting iron and the rest not; and in yet another (*op. cit.* xxxiv. 42), speaking of a kind found in Cantabria, he says that he did not know whether it was useful in glass-making, because no one had ever tried it. The use of manganese at that time must therefore have been common, as Beckman remarks, since it occurred so readily to Pliny in this connection. S. Isidore of Seville (*op. cit.* xvi. 4, A.D. 570—636), evidently quotes the first of the above passages from Pliny, when he says, describing the manufacture of glass, "Magnes . . . liquorem quoque vitri ut ferrum trahere creditur;" and Vincent of Beauvais (*Spec. Nat.* viii. 19, A.D. 1250), repeats the same from S. Isidore. Beckman refers to Roger Bacon and Basil Valentine as further authorities; but, though both writers appear to refer to manganese, I have not been able to discover any passage in which they speak distinctly of its use for purifying glass. Albertus Magnus, however, (b. 1193, d. 1280. *De Mirabilibus Mundi*, and *De Secretis Mulierum*, etc., Amsterdam, 1702—12, p. 75) does so: "Magnes trahit ferrum, carabe trahit paleam, et quidam alius lapis trahit vitrum." Also in his book *De Mineralibus*, II. ii. 11, *Opera*, Lugduni, 1651, Part II. p. 234: "Magnesia, quem quidam magnosiam vocant, lapis est niger, quo frequentur utuntur vitrarii; hic lapis distillat et fluit in magno et forti igne, et non aliter; et tunc immixtus vitro ad puritatem vitri deducit substantiam." Mr. Nesbitt quotes a valuable receipt for making glass from an Italian MS. dating from the year 1443, lately published by Milanese (in *Disp. li. of Scelta di Curiosità Letterarie Inedite o Rare*): 200 lbs. of soda, 40 lbs. of tartar, 150 lbs. of quartz pebbles, and 7 oz. of manganese. Baptista Porta (b. 1445, d. 1519), remarks on the use of manganese in the manufacture of artificial amethysts (*Magiæ Nat.* VI. vi. 4), black smalt (VI. viii. 3), and amethyst smalt (VI. viii. 9); but adds, "Utimur autem magnete in vitro conficiendo," and then quotes the well-known passage from Pliny (VII. lvi.) Agricola (b. 1494, d. 1555. *Georgii Agricolæ De Re Metallica*, Basilæ Helvet. 1621, p. 470), speaks thus distinctly of its use: "Verum sabuli vel arenæ, ex lapidibus liquescentibus confectæ portiones duæ cum nitri vel salis fossilis, aut ex herba salsa facti una commisceantur: ad quas adjiciatur minuta magnetis particula; certe singularis illa vis nostris etiam temporibus æque ac prisca ita in se liquorem vitri trahere creditur, ut ad se ferrum allicit; tractum aut purgat, et ex viridi vel luteo candidum facit; sed magnetem postea ignis consumit." Cesalpinus (b. 1519, d. 1603, *De Metallicis libri tres*, Andrea Cæsalpino Aretino, Noribergæ, 1602, p. 152) marks the distinction between manganese and magnet: "Hoc genus hodie vulgo vocatur manganese, ab Alberto (as above) magnesia; lapis est niger magneti similis quout utuntur vitrearii. Si enim modicum ejus vitro admisceatur, illud purgat ab alienis coloribus, et clarius reddit; si vero amplius tingit colore purpureo." Whilst upon the subject it may not be altogether uninteresting to give some further references, though they are to later writers. Thus Cardan (b. 1501, d. 1576. Hieronymi Cardani *De subtilitate*, v. *Opera*, Lugduni, 1663, iii. 451, 447): "Constat vitrum ex tribus lapidibus scilicet lucidis, vel arena, sale chali, et sydera . . . sydera, quam manganensem Itali vocant, terra est repurgando vitro aptissima." Mercati (b. 1541, d. 1593, *Metallotheca*, p. 148) says: "Manganese . . . cum figulis tum vitrariis usum præbet; nam vitrum tingit purpureo colore ipsumque depurat, adeo ut si viride vel flavum suapte natura sit, eius mistione albescat, puriusque efficiatur." Leonardus Camillus (*Speculum Lapidum*, i. 9, p. 31): "Quidam lapis, ex quo nostri vitrarii vasa dealbant." (*Id.* ii. 7, p. 71): "Alabandicus niger in pupureum vergens lapis est a loco nomen sumens suæ primæ

^a Apsley Pellatt, *op. cit.* p. 32.

substances, or very slight modifications of natural substances. I have found blue glass, for instance, of the fourteenth and fifteenth centuries, on analysis, to contain copper and nickel, as well as cobalt; showing that crude cobalt ore must have been used, and not pure oxide of cobalt.^a In the same way crude oxides of

inventionis; ab igne colliquatur ac funditur more metalli; utilis ad vitrariam artem cum vitrum clarificet et albefacit. Reperitur in multis Italiae locis, et a vitrariis mangadesum dicitur." (*Id.* p. 132): "Magnasia sive Magnesia ex nigro colore in commoditate ad vitrariam artem. Idem quod Alabandicum." Van Helmont (b. 1577, d. 1644. *Opera*, Lugduni, 1667, 472, sec. 143): "Magnes . . . minutulum enim ejus fragmentum, in massam vitream injectum, dum coquitur, è viridi vel luteo candidum efficit." Kircher (b. 1601, d. 1680. *De Arte Magnetica*, 1654, p. 75): "In vitro conficiendo insignis usus est magnetis . . . purgat, et ita vitrum ex virido et luteo candidum facit, et crystallinum, magnes verò ab igne postea consumitur." Sir Thomas Brown (1646, *Vulgar Errors*, ii. 3): "True it is that in the making of glass it hath been an ancient practice to cast in pieces of loadstone." Neri (1612) speaks of the use of manganese for decolorizing glass as an established practice (Ch. ix. x. xiii); as do also his commentators, Merret (1662), and Kunckel (1689). Without such references the use of manganese for purifying Gothic glass might be proved, it might at first sight be thought, by the analyses which indicate its presence, the accuracy of which is not questioned. C. H. Clarke, Esq., F.S.A., however, in the discussion which followed the reading of this essay, ingeniously suggested that the discovery of manganese by analysis was not a sufficient proof of its having been used with this intention, and that its presence might be accounted for by beechwood-ashes (which contain manganese) having been used as described by Theophilus. Mr. Clarke stated further that he had seen a specimen of glass made from beechwood-ashes, which was of a delicate pink colour. But manganese occurs in Gothic glass in greater quantity than can be accounted for by its having been conveyed, accidentally, in the ashes of which the glass was made; and, though it may be possible to communicate a pink tinge to glass made of pure sand by means of the manganese contained in the ashes of beechwood, it is not possible to do so if the glass be made of a ferruginous sand such as was alone used in the Middle Ages (Ex. 91—94).

^a Lehmann is thus incorrect in stating that cobalt ore was first used to tinge glass blue by Christopher Schurer, a glass-maker at Platten, about the year 1540; and Klaproth, Gmelin (both of whom analysed specimens), Beckman, and other writers, in attributing the colour of Gothic blue glass to iron instead of cobalt. The fact is that all old glass, of whatever colour, contains iron, and the cobalt is so powerful a pigment that one thousandth part only will stain glass a deep blue colour, and one twenty thousandth part communicate a perceptible tint (Knapp, *op. cit.* ii. 120, *note*). Its presence therefore may easily be overlooked. Thus Parnell, writing in 1844, remarks—"The presence of oxide of cobalt has never been detected in any specimens of ancient blue glass" (*Applied Chemistry*, ii. 84). See, however, further on this subject in Winston (*Inquiry*, etc. i. 363, *note*; and *Memoirs*, p. 182); from which it appears that cobalt was first found in Gothic glass in 1850 by Mr. Medlock. Neither Mr. Winston nor Mr. Medlock, however, appear to have suspected that the native ore was used; and yet it seems clear to me that that is what was meant by the *zaffiro*, *zafiro*, *zaffera*, *zaphara*, *saphra*, etc. of the middle ages. *Zaffre*, *ζάφειρος*, *safirius*, *sapphire*; hence the sapphires put into the Abbé Suger's glass at S. Denis, that have excited so much wonder, like the mythic silver in church bells, for sapphires could not have communicated any tint. Another curious corruption or mistranslation of the word *Zaphara* occurs in the English edition (London, 1658, p. 181) of Baptista Porta; in which we have *saffron*.

copper were used for ruby and green; crude oxide (unwashed calx or glass) of antimony for yellow pot-metal; crude oxide of manganese for purple; and so forth; no more attempt at purification of pigments for glass being made than of those employed for frescoes and wall-paintings. The crocus of iron, for painting with, was made by digesting iron filings or old rusty nails in vinegar, evaporating, and calcining.^a

2. *Peculiarities of Gothic Glass as regards texture.*

Numerous analyses of Gothic glass have been made, and its varying composition has been accurately determined, but all attempts to imitate it have failed; nor is this wonderful, since the ancient methods of fusing and working differed as widely from the modern as the ancient materials. With the wood fires and imperfectly constructed furnaces then alone in use, it was impossible ever to bring the glass to a perfect state of fusion. In Germany, where many beautiful kinds of modern glass are made, it is true that wood is generally employed, even at present, but in order to get the necessary amount of heat, the furnaces are specially constructed (as may have been the case amongst the Romans), and the wood is specially selected, specially cleft in order to make it evolve heat more intensely, and specially baked in a particular kind of furnace before use, since the best air-dried wood would fall short of producing the desired effect.^b And yet it was the latter alone which was used in the Middle Ages, "*ligna sicca*," or at best "*ligna faginea omnino in fumo exsiccata*," or "*ligna faginea in fumo valde sicca*."^c The furnaces also were of the rudest construction. The glass was made in small uncovered pots, as would appear, on the floor of the furnaces, on which also the fire was kindled around them; the materials being put in, and the glass taken out when fused, through a hole left for the purpose in the outer wall.^d And whereas it is not at all improbable that bellows were used

^a Baptista Porta, *Mag. Nat.* vi. iv. 2, *Crocum ferri conficiendi*.

^b Knapp, *op. cit.* ii. 27. "Good results depend upon an intense and continuous fusion . . . the heat can scarcely be too great; driven snow is not whiter than the burning coal in the centre of the furnace, when it has reached its maximum of intensity." (Apsley Pellatt, *op. cit.* pp. 39-49).

^c Theophili, *op. cit.* ii. 4, 5, 23. Coal was not used until the year 1635, when Sir Robert Mansell, knight, obtained a monopoly for making flint glass, in consideration of his being the first to employ pit-coal instead of wood in his furnaces. The kind of wood, and the importance of selecting that which is suitable, with many interesting details, will be found in Neri (1612), ch. viii. ix. and in the note by Merret (1662) on ch. ix.

^d It is extremely difficult to understand quite clearly the descriptions either of Theophilus (*op. cit.* ii. 1, 5), or of Heraclius (*op. cit.* iii. 7); but the above appears to be the substance of it so far as the present inquiry is concerned.

by the Greeks, Romans, and other nations (we know they were in use amongst the Egyptians even as early as the time of Moses),^a it does not appear that they were used, for glass at least, by the Gothic glass-makers, since they are not mentioned by Theophilus, Heraclius, Vincent of Beauvais, or any other medieval writer in connection with this subject. On the contrary, Vincent of Beauvais speaks of an "ignis follium," in contradistinction to an "ignis vitrearii," in speaking of different kinds of fire for different purposes.^b Thus the glass never got beyond a treacly consistence, and its constituents were never thoroughly incorporated. Even in the case of modern glass, with every appliance and facility, it is extremely difficult to get specimens of tolerably equal density throughout, suitable for optical purposes for instance. Variations of temperature between the bottom, top, and sides of the pot,^c and differences in the specific gravity of the various ingredients—silicates, definite chemical compounds, some much denser than others—cause differences of density and composition in the different layers, and even in the same layers,^d as in the parallel case of spirit and water, syrup and water, and the like, mixing in a tumbler, or wreaths of smoke slowly floating or balancing themselves in the atmosphere. But, whereas in the latter instances homogeneity may be obtained by stirring or wafting, in the former no amount of agitation can produce it; agitation rather, on the contrary, having a tendency to prevent it. Nor can any degree of heat or duration of fusion produce complete homogeneity; heat, at whatever point applied, setting the particles in motion, causing some to rise while others fall to take their place, and thus keeping up a perpetual circulation in the melting-pot. "Glass without fault or blemish throughout is hardly attainable at any one melting."^e Much^f of the inequality is, however, remedied in blowing. The innumerable imperfectly incorporated

^a Sir J. G. Wilkinson, *op. cit.* iii. 338.

^b *Spec. Doct.* 1056.

^c The temperature at the bottom of the pot is about one-fourth lower than it is at the top (Knapp, *op. cit.* ii. 33).

^d Faraday, in his experiments on optical glass (*Philosoph. Trans.* 1830), found on examining pots containing not more than six inches in depth of glass, made from the usual materials and retained at a full red heat for twenty-four hours, that the lower layers remained denser in the mean proportion of 4·10 to 3·43, and that great variations occurred in the density of glass taken even from the same horizontal layer.

^e Knapp, *op. cit.* ii. 35. See also pp. 104, 105; and Faraday, *Philosoph. Trans.* 1830.

^f But not all. Even at the present day, in house-windows glazed with flashed glass, concentric lines often occur which give an enormous distortion to objects seen from the inside; and though, in spread glass, there is no visible distortion, the surface, seen from the outside, is full of undulations. Still, blown glass, of whatever kind, is always much freer from imperfections than that which, even out of the same pot, has been cast.

portions thin and spread out enormously,^a and assume a position on the whole parallel to one another, in a plane at right angles to the axis of rotation; the particles gliding one over another as smoothly as in the blowing of a soap-bubble; layers of one density overlying layers of another density, and thus mutually correcting one another. The Gothic glass, on the contrary, imperfectly fused, heterogeneous, and in an unmanageable state to start with, was worked at too low a temperature, in a manner quaintly childish and imperfect as a manipulation compared with the methods of the present day. The principal peculiarities thus determined, were as follows:—

a. Unevenness of surface. We learn from Theophilus,^b that, in order to make glass into sheets, an iron tube was dipped into the pot, and a portion of melted glass taken up, which was then blown into a long bladder and subsequently fashioned into a cylinder. One side of this was next cut with a hot iron. It was then laid on the hearth of the heated furnace, and, when it began to soften, opened out with a pair of tongs and smooth piece of wood, and made as flat as it would go. As flat as it would go, I say, because when finished, and made the best of that might be, it was never perfectly flat, being always full of inequalities on both sides, and not unfrequently twisted and crumpled like a sheet of carpenter's glue or overheated parchment (Ex. 105, 106). The sheet thus formed being rectangular in shape, its outside edges or selvages were straight (81), not curved as when the glass is whisked out into circular tables or sheets.

b. Inequality of thickness. Nor were the upper and under surfaces of the sheet ever exactly parallel. The unequal thickness of the different portions of the bladder into which the glass was first blown was transmitted unchanged to the cylinder and from the cylinder to the sheet. Even a single pane cut out of the sheet varied sometimes from one sixteenth to three quarters of an inch in thickness (Ex. 107, 108).

c. Inequality of Texture. The concave interior of the cylinder having to expand, and the convex exterior to contract, in the formation of the sheet, its two surfaces became necessarily of unequal density. Thus the inherent want of homogeneity in the glass was fostered rather than remedied by the mode of working. The mass of melted glass stretched, but its particles remained much in

^a In making modern window glass, a mass of about nine pounds of melted metal, at the end of a blow-pipe, is whisked out into a circular sheet fifty or sixty inches in diameter.

^b *Op. cit.* i. 6, 9.

the same relative position as in the melting-pot.^a The want of homogeneity is strikingly seen in much of the ruby glass of the thirteenth and fourteenth centuries, even by the naked eye. The variations are really quite infinite, but three special types may be mentioned:—1. That in which the colour is most capriciously distributed in patches and tongues as of scarlet fire, leaving wide interspaces or flashes of clear white glass entirely free from colour (Ex. 90). 2. That in which the colour is less capriciously, or comparatively uniformly distributed, in curling wreaths as of coloured smoke, crossing and recrossing in all directions; each wreath varying in width from that of a lock of hair to the fineness of a single hair, and in colour from light crimson or scarlet to almost black, whilst the rest of the wreath is of the most brilliant crimson or scarlet. (Ex. 38, 109). 3. That in which the colour is uniformly distributed (to the naked eye), in one unbroken expanse of tranquil intensely bright brilliant and glowing scarlet (Ex. 38). By the microscope the various layers, both coloured and uncoloured, are brought separately and distinctly into view; their thickness may be measured, and their course and distribution minutely traced. In the cross section of a pane of fourteenth century ruby taken at random, three-sixteenths of an inch in thickness, I have thus counted one hundred and forty-three planes of different density—fifty-five coloured, and eighty-eight uncoloured (Ex. 110); and horizontal sections show further the want of homogeneity, and the unevenness of the planes in which the colouring matter is distributed (Ex. 111, 112). Such a texture, though on the one hand but little removed from that of the slag of an iron foundry (Ex. 114), on the other reminds us of many substances found in nature: flint (Ex. 115), agate (Ex. 116), chalcedony, carnelian (Ex. 117).^b The eighty-eight uncoloured layers in the section of glass (Ex. 110), are the solidification of those layers of different density which existed from the first in the melting-pot—layers which may be all of equal transparency, not necessarily involving any roughness or inequality of surface, even in themselves invisible to the naked eye,

^a Winston is correct in stating that the art of flashing glass was known at least as early as the fifteenth century (*Inquiry*, i. 23, 162). He mentions, in particular, two bull's eyes *in situ* amongst the painted glass in Mells church, Somersetshire, which belongs to the latter half of the fifteenth century; and there are six, filling in the top foliations of the tracery lights of a window which retains its original glazing, of the latter part of the fifteenth century, in the north aisle of the nave of Nostell Priory church. It is certain, however, that until the next century the process was not brought to such perfection as to occasion any essential difference in texture.

^b The analogy between Gothic glass and certain natural products will be referred to again further on. That the beauty of many precious stones is greatly due to their want of homogeneity, and consequent effect on light, is well known. Opal (Ex. 118) and lapis lazuli (Ex. 119) may be mentioned, in addition to the above.

and yet each possessing its own peculiar way of refracting and dispersing the rays of light, different from the rest. The images of objects seen through all such glass necessarily appear confused, in proportion to the number of layers and the irregularity with which they are superimposed. "The glass, held at arm's length from the eye, and at the distance of not more than a yard from an object, permits of the latter being distinctly seen through the glass; but, when held at the same distance from the eye, and at the distance of more than a yard from an object, it does not permit of that object being distinctly seen through it."^a Hence Gothic glass is so frequently said to resemble horn. In both a want of transparency arises from interference to the direct passage of the rays of light, caused by multiplicity of layers and irregularity in their superposition; caused, in the former case as already described, and in the latter by the peculiar character of its growth (Ex. 120, 121, 122).

d. Striæ. In addition to the last-mentioned microscopical irregularities of texture, others, visible to the naked eye, abound. Thus, when the layers of unequal density are thick enough to be thus discerned, *striæ* (Ex. 26, 27, 29, 31), from which no Gothic glass is free, are formed. As a rule, they are equally transparent with the rest of the glass in which they occur; they do not necessarily occasion any roughness or perceptible irregularity of surface; but the rays of light in passing through are bent and refracted, and objects seen beyond appear confused and distorted. Held between the sun and a sheet of white paper placed at a suitable distance, images of the coarser *striæ* appear, brighter than the rest if they are denser, and darker than the rest if they are rarer; bright lines indicating convergences of the rays of light, which can only be effected by portions of greater density than the rest, and dark lines indicating divergences, which can only be effected by portions of less density than the rest.

e. Knots. These consist of aggregations of imperfectly vitrified grains of sand, or particles of foreign matter.

f. Air-Bubbles. These are set free by the decomposition of the ingredients of which the glass consists, or of accidentally intruded foreign matter. Unable to unite and disperse, if the glass have not been maintained for a sufficient length of time in a sufficiently liquid state, they remain as a permanent defect (Ex. 123, 124, 125).

^a Winston, *Memoirs*, p. 180. An illustration of the difficulty, or perhaps impossibility, of making perfectly transparent Gothic glass, is the enormous value that was attached to certain glass vessels preserved in some of the sacristies abroad. These, from their perfect manufacture, were not suspected to be glass, but believed to be precious stones. The *Sacro Catino* at Genoa, for instance, was believed, as already stated, to be an emerald; Theodolinda's cup at Monza, a sapphire; and many of the ancient reliquaries of fine crystalline glass mounted in gold were thought to be crystal.

g. Waves. These coarser superficial and protuberant striæ, visible to the naked eye, arose from working the glass at too low a temperature (Ex. 30).

h. Threads, or Strings. These names are applied to other permanent irregularities of surface, caused by cooled particles of glass dropping, during the process of blowing, upon the viscid and imperfectly melted sheet, and being unable to undergo fusion and incorporation.

i. Crystals. These consist of matter infusible at a temperature higher than that at which the rest of the glass solidifies, and are due to slow cooling during a too prolonged and tedious manipulation of the sheet. If separate, they are usually transparent, and, being embedded in the substance of the glass, are invisible to the naked eye; but, when aggregated, they form white elevated and opaque masses visible even at some distance, which under the microscope are resolved into agglomerations of crystals, of which the commonest forms are long needles, prisms terminating in tufts or secondary groups of needles, prisms whose outlines appear corroded and indented like snow crystals, beautifully regular flat six-sided tables with sharp angles, and other six-sided tables—sections of prisms possessing an appreciable thickness (Ex. 126, 127). The minute size of these crystals, and the impossibility of separating them from the glass in which they are embedded, renders it difficult to ascertain their chemical nature; but Reinsch, who discovered some apparently similar crystals in (modern?) glass, concluded that some at least were silica.^a It seems probable, however, that most of the crystals above described

^a Liebig and Kopp's *Annual Report on Chemistry and the Allied Sciences*, ii. 308. When large masses of glass are allowed to cool slowly in the melting-pots, beautiful crystalline effects may frequently be observed (Ex. 128, 129, 130, 131). Dumas and Kersten analysed specimens both of the crystalline and vitreous portions of similar glass, with the following result:—

	KERSTEN.		DUMAS.	
	Crystalline Portion.	Vitreous Portion.	Crystalline Portion.	Vitreous Portion.
Silica - - -	58·8	60·39	68·2	64·7
Alumina - - -	3·3	6·10	4·9	3·5
Lime - - -	20·2	13·40	12·0	12·0
Protoxide of Iron - -	3·5	3·10	—	—
„ Manganese - -	4·2	2·20	—	—
Magnesia - - -	0·5	·40	—	—
Potash - - -	8·2	14·41	14·9	19·8
Soda - - -				

Both portions, therefore, are distinct chemical compounds (Knapp, *op. cit.* ii. 12. See further Dumas, *Traité de Chimie appliquée aux Arts*, ii. 552; Peligot, *Sur la Cristallization du Verre*, Comptes Rendus de l'Académie des Sciences, 1874, pt. i. p. 386).

are either silicate of lime or silicate of alumina. Silicate of lime crystallizes in prisms, and has a tendency to throw out fibrous tufts; and "the difficultly fusible silicate of alumina has a great tendency to acquire a crystalline structure, and thus unfit the glass for ordinary purposes."^a M. Peligot compares the separation of such substances from glass with the separation of crystals of pyroxene and amphibole from their semi-vitreous matrix in igneous rocks.

3. Results of the peculiar Composition of Gothic Glass.

The rudeness and imperfection alike of composition and texture in Gothic glass, far more than any fancied secret of "lost pigments," are the clue to its surpassing beauties. The perpetual variation, uncertainty, and indefiniteness of the processes employed, not only gave rise continually to new effects, but (far more important) necessitated the production of such new effects to infinity, so that no two panes of glass were alike any more than any two blades of grass are alike, any two roses, or indeed any two genuine products whether of art or nature.

a. Potashes. The fact that sometimes one, sometimes another, sometimes both alkalies (potash and soda) were present in the potashes, in infinitely varying proportion, of itself was sufficient to occasion infinite variety of tint in glass containing excess of manganese, since, as M. Bontemps has shown, to glass with a soda base manganese communicates a violet tint inclining to blue, whilst to glass with a potash base it communicates a violet inclining to red. Theophilus has some curious remarks on the effect of prolonged fusion on glass made of beech-wood ashes. He says^b that if beech-wood ashes and sand be fused all night, in the morning at the first hour the glass will be pure and white, at the third hour a light yellow, at the sixth hour orange; later still, tan or flesh colour; in two hours more, light purple; and at last, deep purple. The purple tint would seem to have been communicated by the manganese present in the beech-wood ashes; but see the note on manganese in a preceding section, and compare with the account of Theophilus some remarkable observations by M. Bontemps, related at the meeting of the British Association at Birmingham in 1849.

b. Iron. It was to the excess of iron, in the form of protoxide not oxidized by manganese, that the rich sea-green tints of twelfth, thirteenth, fourteenth, and

^a Knapp, *op. cit.* ii. 3. See also Gmelin, *op. cit.* iii. 378. "The presence of too much alumina produces in the glass a tendency to crystallize."

^b *Op. cit.* ii. 1-8; confirmed by Heraclius, *op. cit.* iii. 7.

early fifteenth century white glass ^a were due; and still to iron, in the form of sesquioxide, that the yellow and yellow-green tints of later white glass must be attributed.

c. Lime. Lime was the cause to some extent of that smoky, horny, chalcidonic, or opaline appearance which distinguishes the Gothic from all other white glass except the early Venetian (Ex. 132), but which was also caused in part, as we have shown, by inequality of texture. It further toughened the glass, rendering it less likely to crack or break by sudden or violent changes of temperature, and hardened it. Glass made only of sand and either potash or soda, or a mixture of the two, would be attacked by water and acids; but a mixture of lime with sand and alkali resists their action, although it produces a more easily fusible material.

d. Alumina. This substance also especially hardened the Gothic glass (which is one of the reasons why much of it is so difficult to cut with a diamond), and rendered it more durable. It also disposed it to receive the yellow stain. It is stated indeed by Knapp ^b that the yellow stain, so freely used during the fourteenth, fifteenth, and sixteenth centuries, can only be successfully brought out with glass that contains alumina.

e. Manganese, and f. Magnesia, as also alumina, lime, and iron, according to Baudrimont and Pelouze, ^c made the glass denser, harder, and more lustrous; the lustre and refractive power of glass increasing with the atomic weight of the bases contained in it, which is the reason why potash-glass is more refractive than soda-glass, etc. The effect of slight excess of manganese, used for decoloration, is extremely curious. As it does not tinge the glass, in the first instance, the excess cannot be recognised; but after the glass has been inserted in windows, and exposed for some time to the light, a pink or violet tint is developed. If a piece be broken into two portions, and one be wrapped in paper and set aside in a dark place, while the other is exposed to the light, the former will remain unchanged while the latter will even in a few months have acquired considerable colour. In some situations, again, where the sun shines obliquely for a part of the day only, one half of a pane will be found coloured and the rest not so; or, on taking out a deeply coloured pane, the margins will be found perfectly

^a The term white glass indicates, not that which is colourless, but that which is not intentionally stained with any colour. The Gothic white glass varied from bluish-green to green, sea-green, greenish-yellow, and yellow; nevertheless, the term white is justified by ordinary usage and by analogy: thus, for instance, we call green or yellow grapes white, in order to distinguish them from purple.

^b *Op. cit.* ii. 112.

Journal de Chimie Médicale, Paris, ix. 277.

colourless (Ex. 104). Gmelin^a thought the change due to oxidation. But how are we to conceive that oxygen can be absorbed by a solid unbroken surface, or that the molecules can change their relative position after once being fixed? The change is probably analogous to that which takes place in the manufacture of ruby glass containing gold. The glass first obtained is perfectly colourless, but on being heated assumes an intense ruby colour. It seems extremely difficult to explain such phenomena satisfactorily.

g. The Colours used for Staining. The white being the basis of all coloured glass, its peculiarities necessarily were inherent in every variety. But, independently, the impure pigments, as in the corresponding case of Roman or early Venetian glass and of the finest oriental porcelain, gave rise to colours beautifully liquid, soft, and neutral, like those of flowers. In the deeper stains the colour imparted by the principal ingredient was dominant, but mellowed and tranquillized by the less perceptible tints of the associated substances, in a manner quite unknown when colours "of superior quality" are employed; while, where the dominant tints did not so entirely overpower the rest, wonderful secondary and tertiary hues resulted. Thus, there was a violet (deep) which rivalled the beautiful bloom of the violet, or (light and softened with grey) like the scabious or Michaelmas daisy: an indigo (deep) like the larkspur or garden anemone, or (light) like the lavender, periwinkle, wood-hyacinth, or campanula; a sapphire (deep) like the speedwell or gentian, or (light) like the borage; and (but more rarely) an azure like the chicory or corn-flower; the tint of the cobalt in the purer blues hiding, but in the more neutral colours not hiding, the purple tint communicated by the nickel and copper in—and yellow communicated by the tin, antimony, bismuth, and zinc, in or lying in the vein with—the crude cobalt ore, which then alone was used, and for which no means of purification, otherwise than mechanical—by levigation, were known. Similarly, there was a bluish green (grey) like that of the olive, or (purer) of a field of wheat just shooting into ear; a brilliant emerald, like that of a May meadow after a shower of rain; a lettuce-green, and an apple-green; the tint of the copper in the purer greens hiding, but in the more neutral colours not hiding, the modifying tints communicated by the impurities which went along with the crude oxide of copper obtained by calcination of the raw unpurified metal. Then, there were lighter blue-greens; fine rich sea-greens; and bright yellow-greens; all communicated by the iron, in different states of oxidation, which existed as an impurity in the sand and alkali of which the glass was made.

^a "*Handbuch der Chemie*," Cavendish Soc. edit. i. 170; and iv. 245.

There was a pale grey-greenish yellow like that of the primrose; a fuller and purer tint like that of the lemon, evening primrose, or jasmine; a warmer yellow, like the daffodil; a rich golden, like that of the king-cup, buttercup, or crocus; an orange (deep) like the marigold, or (light) in every shade of yellowish pink, like the cistus; and a saffron like the tiger lily. Some of these were obtained by the silver stain, modified by various degrees of heat and by impurities in the glass; but most if not all of them were also pot-metals, the deeper being produced for the most part by crude antimony, with which a large quantity of iron was always associated, and the lighter by small quantities of native peroxide of manganese, which also always contained iron. The iron, in the lighter stains, communicated a yellow tint, which became successively fawn, flesh, salmon-colour, peach, heath-blossom,^a purple, and finally, petunia or violet, in proportion as the characteristic tint of the manganese manifested itself. Flaming red, like that of the cherry or gladiolus; scarlet, like that of the field-poppy; crimson, like that of the peony or damask rose; were all produced by another oxide of copper as crude and impure as that which was used for the greens. An exquisite pink, like the blush of a wild-rose, was produced by gold; but a scarcely less beautiful purple, like that of the loose-strife or fox-glove, or (light and softened with grey) like the lilac or mallow, together with a rich amethystine shade like the petunia—were produced by manganese rendered impure by iron.

Thus was it that those "flushed and melting spaces of colour" were ever brilliant and yet quiet; decided and yet tender; gay as the plumage of a tropical bird and yet serious, if not solemn; the tints imparted by accidental admixtures qualifying that of the substance which produced the dominant colour, even as the lighter shades of emotion in a man diversify and soften his intellectual nature.

4. Results of the Peculiar Texture of Gothic Glass.

Prolonged exposure to heat in order to obtain the necessary amount of incorporation, operating with the rude appliances then alone in use, produced no doubt many curious changes in the melting-pots; smoke of burning wood, falling soot, a chip of wood, or a little dust, being sufficient, by deoxidizing some of the ingredients, to produce an entire alteration in the whole; insomuch that the workman who made the glass must often have wondered how it would turn out, and been

^a The exquisite pink glass of the fifteenth century, one of the most brilliant, but most delicate of colours, is best represented by the blossom of the heath—the five-leaved heath (*Erica cinerea*), as distinguished from the ling (*Calluna vulgaris*), or cross-leaved heath (*Erica tetralix*).

astonished at the result. Of the principal peculiarities of texture, induced by imperfect methods of fusing and working, the results were, briefly, as follows :—

a. Unevenness of Surface, and b. Inequality of Thickness. These, other qualities continuing the same, produced an infinite changefulness and variety. We have seen that, by means of an extremely small number of crude and impure pigments, every tint and shade of colour was produced. The amount of pigment employed, together with the varying thickness of the panes, displayed those colours in every conceivable degree of intensity. Even in windows composed entirely of white glass, this endless modification excluded monotony; the uneven surface and unequal thickness serving on a small scale to produce the same effects as on a large scale are produced by the rippled surface and ever-changing depth of the sea.

c. Inequality of Texture. The want of homogeneity, and consequently of complete transparency, not merely fostered suggestively the idea of repose, of shelter, and of retirement, which are of the essence of the idea of a church or of a house, but had the effect also of making the windows look warmer in cold weather and cooler in hot; and, more than this, they were so; for a perfectly manufactured glass, clear and transparent, is comparatively a good conductor of heat, and readily lets warmth through it, returning a perpetual current of chilled air. Want of homogeneity, further, is the secret of the inimitable solidity, depth, and richness of Gothic glass, by reason of which, at least in the earlier centuries, the lightest coloured pot-metals, and even the white glass itself, had such wonderful richness and strength, and the deepest, such as the Early-English blue, such unrivalled subtlety and intensity. Add to this that the numerous planes of different density which we have noticed, instead of passively transmitting, break up and scatter the transmitted beams of light, unequally refracting and dispersing them as the layers of the atmosphere of different density do the quivering light of a star, or the layers of crystals and precious stones do the light of the sun, producing that marvellous fire, or “fluctuation of glowing and trembling colour,”^a which often equals, if it does not sometimes actually surpass, the glory of precious stones; insomuch that, as Vasari says in speaking of a window representing the calling of S. Matthew, in the cathedral of Arezzo, “It scarcely can be considered glass, but rather something rained down from heaven for the consolation of men!”

^a Professor Church, *Colour*, p. 105. All that is said, in this excellent little handbook, on the colours of precious stones and of glass is admirable

d. Striæ; e. Knots; f. Air-bubbles; g. Waves; h. Threads or Strings; and i. Crystals. Upon or in the midst of what is perfectly fused and seen to be clear and transparent even through a microscope, waves, threads or strings, and crystals, represent what was so, but now is not, while knots and striæ indicate what was to be, but is not yet. What was, and is, and is to come; these three elements are present in every genuine product of Gothic art, as in everything that lives in nature. The things which we call imperfections, to the Gothic artist were not so, any more than to the Divine Author of the universe the lichen growing upon the stately cedar is an offence, however much it might be so to a market gardener. The one is the grander and nobler for comparison with the other. And Gothic glass is the more beautiful for the flaws which, naturally, out of the necessities of its manufacture, it never fails to contain. Together with the best which could be done at any period by processes perfectly applied, there was much which was the result of processes carried too far, and processes not carried far enough. But this is only the universal law of all natural development and growth; "Nothing that lives is, or can be, rigidly perfect; part of it is decaying, part nascent."^a Thus these very imperfections, as regards texture, assimilate Gothic glass with the works of Nature, and cause us to regard its production as one of those particular modes of Nature which we call true Art.

The so-called "Gothic Revival" has induced innumerable attempts to imitate these effects; giving us—"for glorious glitter and light, to all mens eies amaze," in "windowes cleare depured all of crystal"—that peculiarly vile abomination "Cathedral glass," so called no doubt on the principle of *lucus a non lucendo*, because there never was any before in any cathedral; for the undulating surface of the old, softly mellowing and dispersing the light, a surface furrowed and ridged in vulgar regularity like that of corduroy cloth, polluting every ray of light that touches it; for microscopic striæ, a few bubbles here and there, accidental crystals, or now and then some half-vitrified grain of sand—coarse protruding waves made on purpose, the greatest number of bubbles the glass can be made to hold when stirred with a patent stirrer made for the purpose, or ashes and cinders riddled over the surface to make it intentionally rough and

^a "The foxglove blossom—a third part bud, a third part past, a third part in full bloom—is a type of the life of this world, and in all things that live there are certain irregularities and deficiencies which are not only signs of life, but sources of beauty."—Ruskin, *Stones of Venice*, ii. 6.

unsightly ; for those soft neutral tints which always harmonized however placed ^a—the “*emeraude so grene*,” “*swete hue of Eastern sapphire*,” or red “*in splendour glowing, like choicest ruby stricken by the sun*”—colours of the rawest, crudest, and harshest description, which never harmonize, nor can ; ^b for the infinite variety of softly graduated tints produced in the ancient by inequality of thickness—separate panes of a few “*assorted*” tints leaded together in staring contrast, little suggestive indeed of the ancient, which differed not more than (at most) the lady-smocks in a meadow—“*all silver-white*,” but which yet were not white, nor any two of them of the same degree of variation from white ; for marvellous age-given tints of mother-of-pearl, softly melting one into another—separate panes again of pale, but none the less crude or harsh blue, green, yellow, pink, and white placed side by side in irreconcilable discordance ; ^c and for other effects of decay—artificial roughing of the outer surface to imitate abrasion, or daubing with brown to imitate opacity, combined with sprinkling to imitate pits, ^d as though the glass were not false enough already without being further falsified. Such grotesqueness of caricature, wildness of exaggeration of accidental features but missing of essence, treasuring up of shell but throwing away of kernel, answers the purpose of “*the trade*” no doubt, and satisfies, as would seem, the guardians of our cathedrals, churches, and public buildings ; but for us—worthless and altogether beneath notice in itself—it can have no interest but as indicative of partially awakening sensibility to the beauty of the ancient in mechanical and uninstructed minds where we should least expect it—minds incapable however of fully realizing either the qualities of the ancient, or the

^a Like the colours in a Turkey carpet, or, in Nature, such combinations as, for instance, the blossom and foliage of the flax, or the bright green foliage of a lemon-tree, loaded with golden fruit, and azure sky showing through the branches.

^b The same applies to much of the modern imitation old Venetian glass, the colours—rose-pink, pale-blue, opal, etc.—being flimsy, crude, or staring, for the same reason as those of imitation Gothic.

^c On the small scale, and imitative specially of the decay of crystalline glass, an “*iridescent glass*” for inkstands, vases, etc. has just been brought out and become extremely popular. The coloration, however, instead of being intensely deep and rich in tone, infinitely varied, and partially and fitfully distributed, is extremely thin and flimsy in appearance, but little changeable, and distributed uniformly with the most artificial neatness.

^d The modes of “*antiquating*,” mentioned above, are resorted to as much to hide the flimsiness and poverty of the modern material as to “*obtain*” the effect of age. The glass, whether in its original or altered state, when tested by Winston’s canon, is found wanting. When held at arm’s length from the eye, before being “*antiquated*,” it permits an object to be distinctly seen at many yards’ distance ; while, after being “*antiquated*,” an object that is more than an inch distant cannot be seen at all. Of the two methods the latter is the worse, because, in addition to rendering the glass opaque, it gives it a peculiarly dark and heavy appearance.

inadequacy of their own imperfect imitations. Add to this, that every imitation must necessarily be false and inartistic. In the true artist, Art is incarnate and self-existing, he needs not any one to teach him, but is what he is as a rose or flower in a garden; ^a which, however tended and cultivated, is still a law to itself, imitates none, and is what it is because it knows not how to be otherwise.

V. MANNER IN WHICH DIFFERENCES OF COMPOSITION AND TEXTURE DETERMINE THE DIFFERENT MODES OF DECAY.

A. THE PROCESS OF DECAY CONSIDERED GENERALLY.

1. *Producing Causes.*

a. Water. Scheele long ago observed that distilled water boiled for a long time in glass vessels became alkaline; and that water dissolves glass under favourable circumstances, is now understood by all chemists (Ex. 96).^b This action takes place with greater ease in proportion as the glass is rich in alkalies.^c It, then, we may conclude, is concerned in the various forms of decay. Thus, the parts of uneven panes on which wet lodges (Ex. 105), the lower edges of panes near where they join the leads, the outsides of windows—which are more exposed than the insides, the middle and bottom of windows—to which rain has most access, and windows on the south and east sides of buildings ^d—on which most rain falls, are most liable to corrosion, though the inside of the glass is frequently more or less affected also (Ex. 90), and no situation, in itself, conveys complete immunity. Breath condenses plentifully on the inside of window-panes,^e and on the outside, where there is no rain, the dews of evening fall. Soils also, and mud, contain water, and hence the rapidity of decay in buried or submerged glass, “cum in

^a Paracelsus, *De Generatione Rerum*; with which compare Plato, *Republic*, bk. x. Steph. ii. 602.

^b “It must not be forgotten that even pure water dissolves very appreciable quantities of glass. The influence of the matter dissolved from the flasks, etc., used in the operations, is too frequently lost sight of in quantitative analysis. There is no doubt that the results are affected to a greater degree than is usually supposed.” (Thorpe, *Quantitative Analysis*, p. 47.)

^c Gmelin, *Handbook of Chemistry*, iii. 383.

^d “Observatum est . . . ferrum ad austrum expositum citius rubiginem contrahere, ad septentrionem tardius, ut in bacillis illis ferreis, aut cratibus, quæ ad fenestras apponuntur.” (Bacon, *Hist. Vitæ et Mortis*, i. 4.)

^e Not generally, however, in old churches if un-“restored,” or in new ones if properly ventilated.

omni putrefactione humiditas acceleret dissolutionem.”^a In dry situations, on the contrary, decay is either impossible or takes place extremely slowly; much of the early Egyptian glass, for instance, being either not at all or but little affected. Elsewhere, though the amount of moisture be extremely small, it produces in the course of time a perceptible action. Operating day and night, winter and summer, year after year, century after century, a gradual but not less certain decomposition of the surface is induced.

b. Carbonic Acid. In every form of decay, further, carbonic acid is an agent. Its action, like that of stronger acids (Ex. 19, 20), is to seize the alkaline and earthy bases and set silica free. That this takes place is proved by digesting any of the different forms of decay in hydrochloric acid, when carbonic acid is liberated, the alkaline and earthy bases are dissolved out, and insoluble silica remains in a filmy or granular form as the case may be. Finely powdered glass damped and exposed to the air for a few days will be found sufficiently alkaline by liberation of the alkaline bases to turn pink litmus blue, and to have absorbed sufficient carbonic acid to cause brisk effervescence when treated with hydrochloric acid. Hence the difficulty, often experienced, of preventing glass in collections, even when preserved in cases, from gradually decomposing. Venetian glass, in process of “sweating” or “blooming” decay, changes pink litmus blue, and if touched by the tongue tastes distinctly alkaline. Gothic glass is similarly affected (Ex. 35). Now carbonic acid exists at all times in the atmosphere, but especially in impure atmospheres, the atmosphere of stables, for instance; hence the quicker decay of window-glass in such situations (where the air is moreover at a persistently elevated temperature, and surcharged with watery vapour), and the greater thickness of the film on the inside of the pane, as compared with that which forms on the outside of the panes of windows in ordinary dwelling-houses. In rain it is abundant, and in sea-water. In soils it exists either naturally, as where for instance alkaline bicarbonates are present, or is produced artificially, as by the decomposition of animal and vegetable matter. The decomposition of mud, loaded with organic matter at the bottom of lakes and ponds, again, is a fruitful source of carbonic acid, which accounts to some extent for the rapid decomposition of glass thrown there.

c. Oxygen. In the decay of glass containing much iron or manganese (especially the former) in the state of protoxide, the oxygen of the atmosphere exerts a powerful though limited action. The protoxides, in combination trans-

^a Bacon, *loc. cit.*

parent and comparatively colourless, by absorption of oxygen are converted into reddish, brown, or black uncombined peroxides, which not only destroy the transparency of the material, but, by occupying more space than the protoxides, assist materially in splitting up its texture and bringing about its final disintegration.

2. Assisting Causes.

a. Pressure. The more rapid and uniform decomposition of glass buried in mud at the bottom of lakes and ponds (Ex. 5), or in moist earth (Ex. 74, 75, etc.), is due, however, partly to pressure; since this involves close contact, and either increase in the number of points of contact, or contact over large surfaces as distinguished from isolated points of contact.

b. Heat. There is no doubt that heat greatly facilitates the action of water and carbonic acid on glass. If water be boiled in a glass retort and the distillate returned as often as it is received, the retort will soon be found to have lost weight, and the residue left after evaporation both to be strongly alkaline and to effervesce with acid. Glass in the windows of warm stables, or thrown upon manure heaps, is also quickly corroded (Ex. 13); and hot acids and alkalies attack glass much more energetically than cold.^a That heat facilitates chemical action in innumerable other instances is well known; but the way in which it operates is not understood. It is true that cohesion diminishes as temperature increases, but it might on the other hand have been expected that increasing elasticity would have opposed rather than favoured combination.

c. Light, d. Electricity, and e. Magnetism, as well as heat, must directly or indirectly assist the chemical action by which glass is decomposed; but an inquiry into the mode and limits of their operation would be extremely difficult in the present state of our knowledge, and carry us too far from the archaeological aspect of our subject.

3. Counteracting Causes.

a. Paint. Whatever shields glass from the action of the atmosphere preserves it. As a rule, therefore, the dark brown painted outlines and shading protect glass from decay. The foliage and other patterns on glass from Chelmorton (Ex. 74), Northallerton (Ex. 75), Stixwold (Ex. 78), Malton (Ex. 80), Newminster (Ex. 81),

^a Gmelin, *op. cit.* iii. 383, 384.

and Bottesford (Ex. 84), are as fresh and sound as the day they were executed, though the glass is so decayed as readily to crumble between the fingers. Sometimes, however, where a too soft flux has been used for fixing the brown paint, it is found, so far from being a protection, to be itself the first to decay (Ex. 133, 134), and traitorously induce the decay of the glass it should defend (Ex. 135). It will be right to notice here a remark by Mr. Winston in the last edition of his valuable work.^a "In some cases the corrosion on the back of the glass is confined to those parts which are opposite to the shadows and painted outlines, or at least is most active in these parts; in other cases, especially in Early-English and Early-Decorated examples, the original thickness of the glass is preserved only in those parts which are opposite the painted outlines, the course of which may therefore be traced on the back of the sheet by corresponding lines a little raised above the general surface." From this it would seem that Mr. Winston was under the impression that paint upon the inside could in some manner induce or retard decay upon the opposite surface; nor will I deny altogether that such a thing is possible. However, as matter of fact, I myself have never been able to find an instance of decay or preservation outside answering to paint or shading inside, except where the outside has been shaded also (as was so common during the fourteenth and fifteenth centuries), or where there is presumption of its once having been thus painted. Thus, amongst the many thousands of square feet of ancient glass in the minster and city churches at York, there are a vast number of extremely curious examples in which the exact position of folds of drapery, or of the eye, eye-brows, nose, mouth, and hair of a figure or other features on the inside, may be discovered by tracts of pitting decay of exactly the same size and shape on the outside; a smear shadow or other paint existing on the outside in the decayed parts, or evidence of its positive removal subsequent to the pitting by the first form of granular decay (Ex. 136, 137). Another example of the manner in which paint hastens decay is seen in those cases in which changes of temperature have chipped off the paint from sixteenth, seventeenth, or eighteenth century enamelled glass, and so let in the atmosphere to act upon a broken and uneven surface (Ex. 134).

b. Yellow Stain. The yellow stain, though of inconceivable thinness, in every instance, without any exception, protects the surface of the glass beneath it. Quite commonly (Ex. 105, 133, 138, 139, 140), where the general surface is much decayed, the yellow stained portion, with sharply-defined edges, is carefully

^a *Inquiry, etc.* i. 24.

and perfectly preserved intact. Thus, the field of an aureole with its fringe of flamboyant rays, or flowing tapestry pattern on a mantle,^a may often be recognised in a moment on the outside, by standing out clear and unaffected whilst the whole of the surface around it has perished. The cases in which decay invades and destroys in spite of the stain (Ex. 139), are explained by imperfection in its application. Breaks (it may be of microscopical dimensions) exist; the air gets in, undermines it, and exfoliates the surface beneath, taking the stained portion with it.

As for the various pigments used in pot-metals, it has not appeared that any of them either accelerate or retard decay, the various kinds of coloured glass appearing to be all about equally, *cæteris paribus*, liable to corrosion.

B. THE DIFFERENT MODES OF DECAY CONSIDERED IN DETAIL.

a. Superficial creeping granular. This is the simplest of all; the separated constituents of the glass, in an extremely minute state of subdivision, being together upon the surface, whence they are speedily removed by wind and rain; leaving a surface more or less uneven in consequence of the cropping out upon the surface of layers of greater density than the rest. These, being dissected out by the decay of intervening portions, stand out and act, as we have seen, as prisms, like the laminae of iridescent shell (Ex. 141) or pearl (Ex. 142). At the same time it is not quite certain that the iridescence may not also arise, to some extent at least, from the decomposition of light by the minute angular fragments of glass lying loose upon the surface (Ex. 35, 36), in the same way as those coloured circles round the moon, known as haloes, are believed to be caused by the minute particles of ice of which the clouds in the upper regions of the atmosphere, between us and the moon, consist.

b. Deep creeping granular. In this, separation does not take place at once. The surface is, however, raised and puckered by the absorption of carbonic acid and watery vapour, which necessitates expansion; and, eventually, the affected portion is disintegrated by the action of heat and cold, frost and thaw, wind and rain.

c. Spotty or pitting granular. This is essentially the same process as the other two forms of granular decay, the only difference being that while in the latter, from the mechanical structure of the glass, the carbonic acid and watery vapour

^a The yellow stain, it will be remembered, is ordinarily applied on the outside of the pane, but is invisible except from the inside.

meet with more obstruction downward than laterally, in the former they meet with more laterally than downward; just as the rust of steel extends deeply from a point already formed, more easily than it originates fresh rust upon a polished and unbroken surface; or as the surface of certain shells (Ex. 143) when exposed to the atmosphere, instead of being smoothly and evenly worn away, becomes eaten into holes such as we see in the coarser makes of horny glass;^a or as ice, an apparently homogeneous substance, in thawing, eats into pits, rough holes, and coarse uneven surfaces ("rotten ice," in appearance, not being very unlike "rotten glass"). Want of homogeneity, and unequal force of cohesion between different portions of the ingredients, owing to the manner in which the glass was fused, worked, cooled, or annealed, determine, *cæteris paribus*, the selection by the atmosphere of certain points—so characteristic of this mode of decay, the difference of rate of decomposition in the same situations, and the general course and rate of progress. The atmosphere, having separated the earthy and alkaline matter of the glass at a given point, and left granular amorphous silica around it, penetrates the silica circle and lays down earthy and alkaline matter again on the outside of that, and so on, until the spot is complete; when excavation commences, and is completed as in the last form of decay; lichens, it may be, assisting; at first finding on the roughened surface of the glass a precarious resting-place, and deriving their nourishment from the atmosphere, but eventually rooting into the small crevices they find, and by the expansion of their roots making room for the admission of rain. In due time frost comes, rending asunder and shelling out the loosened particles; the rains of spring wash them away; et "quod fuit fastigium, fit vestigium."

d. Splitting, or crackling granular. One reason why horny (as distinguished from all makes of crystalline) glass is specially predisposed to split and crumble under favourable circumstances, is probably its having been, as a rule, but imperfectly annealed at the time of its manufacture. When a thick pane of glass is quickly cooled, the inner portion remains soft after the exterior has become solid;

^a The outer portion of such shell consists of crowded polygonal prisms placed perpendicularly more or less obliquely to the surface, of a texture which we can demonstrate by the polariscope to be extremely variable (Ex. 144). On exposure to the atmosphere, the softer prisms are the first to decay, leaving the harder portions intact. Other shells, when exposed to the weather, illustrate other forms of decay; as when, for instance, multitudinous parallel layers or lamellæ are dissected out by the decay of a previously smooth and unbroken surface, leaving sharp edges standing out free, and resisting the action of the atmosphere for a longer period (Ex. 145). This mode of decay rudely resembles that of the glass which, being affected with the first form of granular decay, causes sub-iridescence as explained above.

and the outer solidified layers, being then fixed, are for ever henceforth incapable of contracting commensurately with the inner. The inner and outer portions are thus, when cold, in a state of tension and strain with respect to one another;^a but slight mechanical violence (as in the familiar instance of Rupert's drops or the Bologna phial) being sufficient to determine fracture. If cooling take place more slowly, the glass may be sufficiently annealed for practical purposes; and yet, especially if the sheet be thick, of unequal thickness, uneven, or of unequal texture, far from perfectly annealed. Expansion or rending, even though it be at a minute point, in such a case, will be sufficient to determine fracture, as in the familiar instance of splitting ice by means of the point of a needle. And expansion must take place at any point at which carbonic acid, water, and oxygen are being absorbed. That lime has a strong attraction for carbonic acid is well known; the whiteness or greyish whiteness whether of spots or patches being, as matter of fact, found on analysis to be due principally to lime, separated from the glass by, and combined with, the carbonic acid of the atmosphere.^b Sometimes, in addition, as we have seen, the glass contains a large quantity of iron, and then the spots and patches, instead of being grey, are brick red (Ex. 105); or, when it contains much manganese, as well as iron, black (Ex. 60, 63, 64, 65, 67, 68, etc.) It is by absorption of oxygen from the atmosphere that the iron, existing in the glass as green protoxide, becomes red peroxide;^c while the manganese, existing as a colourless protoxide, by absorption of oxygen becomes black, or rather an extremely dark-brown, sesquioxide. In such absorption by lime of carbonic acid, then, and by the protoxides of iron and manganese of oxygen, we have elements necessitating a sufficient amount of expansion to account, I think,

^a That the particles in unannealed glass are in an irregular state, is beautifully demonstrated by the polariscope. Place a piece of glass, an ordinary microscope slide for instance, in a polariscope furnished with a selenite plate, and no change will be observed; but remove the glass, heat it nearly to melting, then suddenly cool it so as to render it unannealed, and on replacing it in the polariscope a most beautiful play of colours, indicating physical inequality of texture, will be observed.

^b In a somewhat similar manner, if fluoric acid be applied to a portion of the surface of a pane of Gothic glass, it becomes, when washed and dried, perfectly white. The acid dissolves out the silica, alumina, soda, potash, and iron, but leaves the lime and magnesia in the form of insoluble fluoride (Ex. 146).

^c The statement of Mr. Apsley Pellatt (*op. cit.* p. 138), that iron in glass preserves it from decay, is incorrect. It is, *ceteris paribus*, exactly the reverse, just as preponderance of lead, in flint glass, induces decay; lenses of flint glass being more prone to "mildew" than those of crown glass, and those now made, especially by inferior houses, than those made formerly, the labour for cheapness and excessive brilliance inducing the addition of too much lead, whereby the glass is rendered softer and more prone to decay.

under the circumstances, for that splitting up of the surface around centres of decay which we have noticed (Ex. 65, 67, 68, 95).^a Were there any doubt respecting the nature of the black colour of the dendritic prolongations, and of the sand into which the glass ultimately crumbles, it would be removed at once by digesting a fragment in hydrochloric acid, which dissolves out iron and manganese,^b recognizable by the usual tests. The same substances are also present in the other forms of granular decay;^c and, in buried glass affected with filmy decay, it is the oxidized iron which forms the cement^d by which the particles of earth are fixed so firmly on the surface (Ex. 2). The less homogeneous the glass, the sooner it is destroyed by this form of decay. As chemical action begins, so afterwards it is concentrated, and finally exhausts itself, in those parts which are most destructible. These destroyed, the glass itself (even though not entirely decomposed) crumbles to pieces, since its durability, like the strength of a chain, is only that of its weakest part.

e. Filmy or Iridescent. This decay results from the decomposition of a more homogeneous and better worked glass than any of the granular forms; more homogeneous, but still not perfectly homogeneous: for even in the finest glass the homogeneity is not absolute. Some coarse indications of want of homogeneity in the melting-pot have been already mentioned, but these must be multiplied many thousandfold if we would have the state of the worked material. In well-blown glass these innumerable imperfectly incorporated portions thin and spread out, and assume a position, as we have seen, on the whole parallel to one another; and it is this position which is dissected out, as it were, and clearly shown, in the course of decay (Ex. 10); just as the innumerable lumps of flour, water, salt, etc. in the dough of pastry, each surrounded or separated from its

^a The rusting of an iron rod splitting the stone into which it is fixed, and the hydration of lime in badly tempered mortar throwing down a wall built with it, are familiar examples of this kind of action on a large scale.

^b The black dendritic arborescent markings in chalk and flint are oxide of manganese (Mantell, *Geolog. Excursions round the Isle of Wight*, p. 130); the supposed vegetable structures in agates (Ex. 148), are oxide of iron (Griffith and Henfrey, *Micrographic Dict.*, s. v.) Mica also contains similar deposits (Ex. 149).

^c It is to get rid of them that the scales of decomposing glass are boiled in acid (Ex. 86).

^d The extraordinary cementing power of iron may be seen sometimes on picking up a rusty nail on the sea-shore. With it, firmly attached, will often come up a lump of conglomerate weighing several pounds, which, when dry, becomes so hard that, if struck with a hammer, the pebbles will break rather than leave the cement which binds them.

neighbour by a film of grease, spread out into flattened layers when the mass is rolled out, and when the pastry is baked (the watery portion evaporating), show themselves forth still further thinned and now clearly separate. The interspersion of patches of decay confusedly filmy amongst other which is, in the main, granular, arises from want of homogeneity, and may be imitated by acting on a suitable specimen of glass by fluoric acid (Ex. 147). That which would have undergone granular decay is dissected out from that which would have undergone filmy, and the two portions are distinguished from one another, side by side. The second form of spurious film, in which the films lie parallel with the surface, indicates a glass in texture the most of all allied to that affected by true filmy decay; the first and third, in which the films lie obliquely or even perpendicularly to the surface, indicate a texture much further removed; the deep creeping, and especially the pitting granular, being without film, indicate texture the furthest of all removed from that of crystalline glass. Usually glass affected by fully developed filmy decay is dry and pulverulent, and then always iridescent, but sometimes, as in the case of "sweating" Venetian glass, clammy or moist, and then not iridescent; glass with a soda base forming an efflorescence of carbonate of soda which remains permanently dry, but glass with a potash base yielding carbonate of potash, which is extremely deliquescent. Moisture, a drop of water for instance, or oil, destroys the iridescence by uniting the films into a transparent mass, and thus allowing transmission, but preventing reflection of light—which is essential to the production of colour; the latter being caused by interference of the ray which enters a film, and is reflected from its under surface, with the ray which is directly reflected from its upper surface. For this to occur, the films of silica, like those of oil or tar swimming on the surface of water, the soap-bubble, etc. (Ex. 145) must be extremely thin; less, according to Newton's table,^a and in some cases (according to colour) very considerably less, than from seven to twelve millionths of an inch in thickness. The more ancient the glass, *cæteris paribus*, the richer and more gorgeous are the colours upon its surface, and the more dazzlingly brilliant their disposition. Nothing can surpass, for instance, the splendour of many of the fragments from Assyria, Babylon, and Cyprus, in the British Museum; purple, blue, green, deep orange, yellow, and scarlet. In such instances the magnificence of colour is due, no doubt, to age having given time for the completion of decomposition, for the reduction of the films to their ultimate degree of thinness. The brilliance of surface, over and above whatever

^a *Optics*, ii. 2.

is possible in the way of mere colour, is due to the innumerable convexities and concavities of blisters—broken and unbroken, visible to the naked eye (as in some of the Assyrian and Babylonian specimens), or (as in by far the great majority of cases quite) invisible except by the microscope, acting as so many mirrors to reflect the light, like those upon the back of a diamond beetle, or upon the velvety petal of a geranium. Some of the films are of one colour only (Ex. 8, 13), but some of several (Ex. 9). This implies difference and irregularity of thickness. It seems fair to infer, also, that the films of one thickness result from the decomposition of a more homogeneous glass than the films of several, since the more homogeneous the glass, the more evenly the various molecules of its constituents must be distributed, and the less they need, relatively, to be disturbed in its decay. Thus apophyllite,^a by hydrochloric acid, is resolved into iridescent scales like those produced from glass by the atmosphere, whilst asbestos,^b under the same circumstances, deposits silky fibres. The scaffolding of alkali being removed,^c the silica remains as nearly as possible in the same form and position as it existed in prior to being set at liberty. In the finer and more homogeneous Roman and modern glass, the particles of silica, being closely approximated and whisked out into thin films, separate in the course of decay in films; whereas, in the Gothic and other complex and heterogeneous glasses, the particles being more widely separated, and holding a position in the sheet or utensil not widely differing from that they had in the melting-pot, disintegrate, in the course of decay, in powder, the constituent particles of which have little coherence.

^a A glassy mineral of white pearly lustre, found in the trap-rocks of Skye, etc. consisting of the silicates of lime and potash.

^b A mineral in the form of white flexible threads, from Sardinia, consisting of the silicates of lime, magnesia, iron, and manganese or soda.

^c How far the alkalies are removed in decayed glass is shown in an interesting manner by the following analyses (A) of the unaltered inner portion, and (B) of altered exterior coating of ancient glass dug up near Rome:—

	Silica.	Alumina.	Lime.	Magnesia.	Iron.	Soda.	Potash.	Water.
A.	59.2	5.6	7.0	1.0	2.5	21.7	3.0	—
B.	48.8	3.4	11.3	6.8	11.3	—	—	19.3

And from an analysis by C. W. Bingley, Esq. Ph.D. F.C.S. it appears that whereas the unaltered inner portion of glass found in the lake at Walton Hall, near Wakefield, consisted of silicate of potash, with very slight traces of lime and iron, the scales of the exterior or decomposed portion were found to consist of silicate of lime, associated with iron, but no potash or soda. (*British Association Report*, 1859, p. 45.)

It is interesting to observe that changes precisely analogous to those we have described, but on a much grander scale, may be observed in the case of certain rocks and mountains exposed freely to the action of air and rain;—chemical and mechanical causes at work, producing chemical and mechanical changes, which vary with the composition and texture of the surfaces affected. Sharp striæ stand out in high relief above the perishing surface around them, or lines of decay eat into the stone whilst the general surface is unaffected; deep holes are honey-combed into the surface, or high mammillated projecting eminences stand like bulwarks after the surface around them has passed away; the stone exfoliates in layers, or is disorganized by gaping cracks and fissures. Many of the ancient igneous rocks contain crystalline substances which closely approximate glass in composition, differing from it only as sugar-candy does from barley-sugar, or snow from ice (Ex. 151, 152); nay, some of them are glass of a rude cyclopean make (Ex. 153), a refinement of modern volcanic products (Ex. 154), which again resemble not distantly the slag of modern blast furnaces (Ex. 155). Indeed, M. Chaptal, in 1780, at that time Professor of Chemistry at Montpellier, proposed to employ certain lavas, pumice-stones, basalt, felspar, and other igneous products for making bottles, and the thing so happily thought of turned out a success in practice.^a Granite, which may be regarded as a kind of natural glass, slowly cooled, and crystallized,^b desquamating, crumbling, pitting, and splitting, may be taken as an illustration of the decay of minerals of this class. “The disintegration of granite is a striking feature of large districts in Auvergne, especially in the neighbourhood of Clermont. This decay was called by Dolomieu ‘la maladie du granite,’ and the rock may with propriety be said to have the rot, for it crumbles to pieces in the hand.^c The same has been repeatedly observed elsewhere. “Some greenstone^d dykes are thus entirely decomposed to great depths from the surface, and whole rocks of granite, secretly rotten, wait only for an earthquake or water-spout to be entirely reduced to fragments.”^e Rain, charged with carbonic

^a Dumas, *Traité de Chimie appliquée aux Arts*, ii. 575, 576. The bottles at first made were lighter and otherwise superior to those in common use, but the process had to be discontinued because of the difficulty of getting, 1. Minerals of uniform composition; and 2. Customers who would be satisfied with bottles that were not uniformly of the same appearance. Further experiments were made by M. Alliot, who found basaltic earth exceedingly well qualified, both by itself and combined with other substances, for fusion into glass. Messrs. Chance, of Birmingham, have also utilized the vitreous slag of iron foundries.

^b A mixture of silicates of the alkalies, lime, magnesia, alumina, and iron.

^c Lyell, *Principles of Geology*, p. 249.

^d Silicate of magnesia, lime, alumina, potash, and soda.

^e Phillips, *Geology*, p. 469.

acid, gradually withdraws the alkaline and earthy bases,^a leaving the silica, alumina, etc.; oxygen, as above, attacking the ferruginous ingredients, causing them to swell, and bursting them to pieces. Thus air and rain, on a large scale, do to the strata of a country precisely what, on a small scale, they do to the glass in a church window. The softer parts become disintegrated, and are then carried to lower levels; the harder parts remain longer, but in their turn must go like the softer. It is but the difference of time. That happens to rocks and mountains in thousands of years which comes to pass in a painted window in a few hundreds.

VI. PRACTICAL INTEREST OF THE SUBJECT.

a. In connection with the Determination of the Make and Age of Glass. Independently of the general scientific and speculative interest of the subject thus far treated, the decay of glass is of practical interest to the antiquary, because it is, to some extent, a guide to the make and age of glass, and, in doubtful cases, may be of service in determining them. Thus, the Rev. Assheton Pownall, F.S.A., gives us an account of a glass bottle discovered "among the foundations of the east wall" of South Kilworth church, "bottom upwards, among the stones;"^b and of another found "in the foundations of the west wall of the north aisle of Lutterworth church," as though the deposit had been "made quickly and with secrecy."^c Mr. Assheton Pownall is satisfied that those bottles are medieval, and on that presumption has founded a learned argument as to their use, and the circumstances of their burial. Meanwhile, the absence of any documentary or clear evidence as to the position in which the bottles were found—not in, or under, but near the actual foundations of the church, and the like, suggest a doubt as to

^a The various clays, so extensively used for all kinds of brickmaking and pottery, are the product of such decomposition. The following analyses (A) of Felspar, and (B) of Clay, dried at 212°, will serve for illustration:—

	Silica.	Alumina.	Lime.	Magnesia.	Iron.	Soda.	Potash.	Water.
A. -	64.26	19.27	0.7	0.77	0.5	2.88	10.58	—
B. -	46.32	39.74	0.36	0.44	0.27	—	—	12.67

but both the felspars, etc., and the clays differ in composition, and I cannot lay my hand on an analysis of a specimen of felspar and of clay formed from the decomposition of the same rock. In red clay the lime is as much as 1.5 per cent., magnesia 2 per cent., and iron 8 per cent. (See, on this subject, a valuable summary in Knapp, *op. cit.* ii. 202.)

^b *Proc. Soc. Ant.* 2 S. iv. 284.

^c *Id.* v. 114. The Cornwall bottle, mentioned at p. 135, having been built into the wall of the church, "embedded in the east wall behind the altar" (letter from Mr. White to the writer), belongs to a different category, and, like the glass vessels found of late in the altars of churches on the Rhine, need not now be considered.

whether the bottles are really as old as the church—a doubt strengthened by the fact that bottles exactly similar are sometimes represented in old engravings, and may even actually be met with occasionally at the present day. I lately picked up three (Ex. 156) in an old herbalist's shop at Wakefield, and possess the bottom of another which was found in a garden at Wakefield (Ex. 157). But, in examining the decay, the doubt becomes almost a certainty; for we find no trace either of superficial or deep creeping or pitting or crumbling granular decay, but, instead, the iridescent filmy decay of a seventeenth or eighteenth century buried bottle. We conclude, therefore, that the Kilworth and Lutterworth bottles are of comparatively modern date, and at once seek for some other explanation of their mysterious burial.^a

b. In connection with the Æsthetics of Glass of various kinds. The consideration

^a It has been suggested by Mr. J. T. Micklethwaite, F.S.A., and I think with probability, that the bottles thus buried in consecrated ground may have contained—not "St. Katharines oyle," or the like, but *Aquam a renibus humanis secretam*, and been charms against witchcraft, or for the cure of certain diseases. It was common enough in the seventeenth century for any one who had a weakness to bore a hole in an oak tree, and fill it with cuttings of hair and parings of nail, under the impression that the disease of the afflicted person would be attracted by the strength of the tree to itself; or to pare the nails of the fingers and toes of the person, tie the parings in a rag cut from his clothes, and bury them in some secret and unknown place (Pettigrew, *Medical Superstitions*, p. 72; Kircher, *De Arte Magnetica*, 1654, iii. 2); or bury the water in an ants' nest (Ennemoser, *Hist. Magic*, Howitt's edit. ii. 209; Pettigrew, *op. cit.*, p. 75), or dunghill (*id.* p. 76); special care being taken by any one accidentally finding the same not to touch it, lest he should receive the buried weakness (Ennemoser, Pettigrew, etc.). When the patient was suffering from witchcraft, the water was corked up in a bottle with pins, needles, and nails, and put before a fire (Brand, *Pop. Antiq.* Bohn's edit. iii. 13), or up the chimney, or buried at the doorstep, or in the "wall-roots" of the house in which the patient resided. Numerous instances of the practice of these superstitions even at the present day, in remote country districts, have come within my own cognizance, and others have been related to me by those in whose experience they have occurred. Mr. Peacock has found a dozen or more such bottles in the "wall-roots" of cottages pulled down on his estate at Bottesford; and he says that in North Lincolnshire, and elsewhere, the charm is still practised as a remedy against witchcraft. Professor Stephens, of Copenhagen, informs me further that such bottles are not unfrequently found in Denmark, usually very carefully fastened, if not sealed; that they are usually of late date, of the seventeenth or eighteenth century; that they occur always in out-of-the-way places; and that he believes them to have been so buried in connection with popular and superstitious sympathetic and magical medicine. From the Saxon "*Leechdoms*," edited by the lamented Rev. O. Cockayne, it would appear that the burying of charms in "wall-roots" was familiar even to our Saxon forefathers (i. 329); who also made drinks for fiend-sick men, *to be drunk out of church bells* (ii. 137). The use of holy water, holy oil, and so forth, to expel demons, was also very ancient; and Jerome Mengs, in his *Flagellum Dæmonum*, speaks familiarly of the use of "*Reliquiæ sanctorum, lignum crucis, et similia*," for a like purpose. The idea of the sacredness of wedding-rings, churchyards, etc., continued to a late period, and in the seventeenth century became mixed up with the belief in "sympathy," "transplantation," and the like. Later still, the idea of a sacred place being necessary was lost, and it was

of the subject is of further interest because it explains how the decay of glass, like the changing of leaves in autumn, enhances the beauty of that which is already beautiful. We have remarked upon the beauty of the *patina* on Assyrian, Greek, Roman, and other ancient crystalline glass; and upon the exquisite nacreous appearance of Gothic window-glass under certain circumstances. The various forms of granular decay produce a *patina* not less beautiful. The fitful chequering of the surface with brown and grey; the finely wrought embroidery pattern of creeping stains of rich nut-brown, graduated in inexhaustible variety, like clouds—no two of one shape; like trees—no two of one size; like the veinings of precious marbles, endlessly mingled and interrupted—no two of one character or distribution; this splendid mantle, which with affectionate piety covers, softens, mellows, blends, and harmonizes everything; “the broken effect that time produces”^a—is not this almost like a perfecting by God of the work of man? The plumage of the peacock is the more glorious for not being all sufficient if it were a healthy one, or even a secret one (not likely to be disturbed by one's enemies), in which the weakness of the afflicted party might quietly be buried, and thus got rid of for ever. The belief that decay and destruction were induced more rapidly by the soil of a cemetery than by that which was pure and uncontaminated should, however, be noted in passing. (“Cemiteria, in quibus quotidie fiunt sepulture, ubi terra cadaver aliquod recens impositum consumit longe citius quam terra pura.” Bacon, *Sylva Sylvarum*, 330; with which compare the burial of the water of a sick man in an ants' nest, or dung-hill, noted above). “Humana excrementa etiam post ejectionem seculis antea actis credebantur potentiam sympatheticam nihilominus in corpus emittentis retinere, beneficium vi quadam mysticâ recepturi, si, exempli gratiâ, solum sacratum illis imponeretur, vel aliter noxam, ut e verbis sequentibus satis patet. “Si quis ad ostium tuum cacaverit, idque prohibere intendas, ignem ferri recenti excremento superstruito; mox per magnetismum natibus scabiosus cacator fiet: igne videlicet torrente excrementum et tosture acrimoniam quasi dorso magnetico, in anum impudentem propellendo.” (Van Helmont, *De Magnetica Vulnerum Curatione*, § 21. Idem remedium apud Kenelmum Digbeium invenitur, *op. cit.* 126.) On the other hand, country people were believed to have sounder constitutions and to live more healthily because they were able to commit their excreta “to the earth, most commonly amongst wholesome herbs, and so by means of an occult Transplantation lead their lives more free from diseases.” (*Medicina Magica tamen Physica*, or a methodical Tractate on Diastatical Physick, 1656, chap. xxvi.) The reason why the water was specially chosen for experimenting with, and for making magical cures, insomuch that “a grievous disease of the whole body is no way better cured than by” it, was because “it hath no obscure consent with the whole body,” being derived from all parts of it. (*Id.* chap. xxvii.) We have thus sufficient evidence of the burial, for the production of magical cures, of such bottles in wall-roots and other places, for instance churchyards, in which it was presumed the “buried weakness” would either on the one hand speedily decay, or on the other receive and transmit a blessing; and have formed some idea also of the light in which the subject presented itself to our forefathers. Lectorem denique animadvertere velim Pharmacopolæ Lutterworthensis testimonium, cui ampulla vitrea ibi inventa olei origani odorem referre videbatur. Hoc enim præcipue notandum existimo, quia nullum pharmacorum quæ noverim putrescentem urinam manifestius olet.

^a Winston, *Memoirs illustrative of the Art of Glass-Painting*, p. 44.

gold and blue and green, but speckled with grey and black; flowers are the more beautiful for not standing alone, but surrounded by broken light and shadow produced by the foliage to which they belong; the stained tints of a Gothic window are the richer and softer for the subjects painted thereon, and for diaperings, which are a sort of substitute, suggested by a true artistic instinct, for the broken light and shadow of the foliage round a flower; and as foliage and flower alike themselves again are veined and mottled and spotted—as gillyvors are streak'd, and cowslips freckled—so Gothic windows, to be perfect, must be painted by time as well as man. It has been thought that even as early as the thirteenth century our forefathers themselves tried to imitate these effects by dashing or splashing soft mortar over the exterior of some of their windows after they were fixed in position, where to this day it remains, after five or six hundred years, so firmly fixed that it cannot be detached without bringing the surface of the glass along with it (Ex. 158). But the excavation of tracts of decay also produces peculiar beauties. It is to this that the characteristic silvery^a appearance sometimes seen is due, the glass being thinned, and the light, instead of being simply transmitted, being also dispersed by the roughened surface at an innumerable number of angles. Thus the eye, though it looks without impediment through the clear and as yet not perceptibly corroded inner side, looks not through, but at, the illuminated outer side. The exfoliation or shelling out of wide shallow spots of the third form of granular decay produces bright silvery patches which, mingling in a fitful and irregular manner upon the clear and unaffected surface of the glass with the opacity—infinately varied in degree—of spots as yet unexcavated, produces a striking effect. The greatest amount of opacity is produced by the thick adherent crusts of the second, and deep opaque spots of the third form of granular decay; the least, by the light powdery and easily detached efflorescence of the first. Compare, for instance, the windows of the Chapter House at York with those of corresponding date in the clerestory of the Cathedral at Rheims, or those (much older) at Chartres. All of these are extensively decayed, but whereas the York windows (affected with deep creeping decay) are to a great extent impervious to light, and the subjects discernible only with great difficulty or not at all, the rest (affected with superficial creeping decay) are clear and bright, and the subjects almost as distinct as when first executed. Or take for example the never-to-be-forgotten glass in Italy and Spain, of such matchless clearness and

^a This term is not used here in the loose sense in which it is too often applied to almost all old glass as compared with modern, but to denote an effect of transmitted light which does, strictly and accurately speaking, very closely indeed, resemble that of light reflected from a plate of burnished silver, or from a pearl.

brilliance, as well as richness and solidity. The excellence of the material, the intensity and brightness of the light in those countries, the comparative fewness and smallness of the windows through which it has to pass, and the height of the windows from the floor, causing the rays of light to pass through the glass to the eye with greater obliquity, and consequently through a greater depth of colour, must no doubt be considered; but the principal reason still remains—that the glass, though decayed sufficiently to break and modify the tints, is not decayed in such a manner as to produce opacity. The decay is either entirely of the superficial kind, the products of decomposition falling off of themselves or blowing off by the breeze or washing off with the dew and rain so as always to leave a clean new, though altered, surface, or mixed with an extremely fine and shallow spotty form which does not to any appreciable extent interfere with the transmission of light. I have examined with particular care the glass in the cathedral at Florence, which (executed, it is said, at Lübeck, in the first half of the fifteenth century, from the designs of Ghiberti and Donatello, by a Florentine artist believed by his contemporaries to be the greatest master in the world) may well be received as typical of the finest quality of Gothic glass. The decay, on the one hand without film, and on the other without either pitting or shelling, indicates indeed a texture inclining neither on the one hand to crystallinity, nor on the other to that exaggerated coarseness of which pitting and scaling are the signs. I have also examined the glass in some other churches in Italy, France, and Spain, without being able to find a trace of either the deep creeping or coarse pitting decay which are so common in “Glasse of England.” Glass, in England, however, from “beyond the Seas,” especially that “best, cleanest, and strongest Glasse of beyond the Sea that may be had in England,” such as that for instance in the Beauchamp Chapel at Warwick, remains as free from extensive opacity as that abroad; showing conclusively that modifications of decay arise from differences of make in glass, and not from differences of climate.

c. In connection with “Cleaning” and “Restoration.” Another point of importance, suggested by a consideration of this subject, is the adequate protection of glass, and especially of painted windows, in a state of decay. As gelatine in the course of many years is withdrawn from bone, which nevertheless retains its original form, but instantly crumbles into dust when touched, so the alkalies (the back-bone as it were of glass) may silently be withdrawn, and the glass nevertheless retain its form for centuries, if undisturbed. Fragments dug up, split and cracked in all directions, and ready to crumble into dust, may nevertheless, with care, be preserved for an indefinite length of time. And panes of glass may have

their surfaces ready to exfoliate or disintegrate, and remain for centuries to come as they have done for centuries past. Place them in the hands of a "Restorer,"^a however, and there is an end of them. I do not at present speak of the danger of their being "restored" out of the church altogether, as a whole window in the Chapter House at York was some years ago, or the upper half of the west and half of one of the south aisle windows at Fairford,^b but of what is generally included under the term "cleaning," by which is meant steeping in acid, scrubbing and brushing, or at least washing in plain water, or dusting. Now, Mr. Winston, before a Meeting of the Royal Institute of British Architects, 14th June, 1852, stated that a good deal of old glass was "as clear as the day it was put up," not having been "so easily attacked by the atmosphere" as other glass; and advocated the "cleaning" of old glass, referring especially to the "good effect" of the "cleaning" to which the windows in King's College Chapel, at Cambridge, had been subjected. But nothing can be more dangerous than such a remark, or more false than the statement on which it is founded. It is true that much old glass does not appear to the naked eye to be decayed, but I have never examined any (exposed to the weather) under the microscope that has not been more or less so, while the paint of much, even so late as the latter part of the fifteenth century, which cannot be seen to be affected, nevertheless is so, and readily washes off. "Cleaning," therefore, though a possible thing in some cases, must necessarily be hazardous in all, and there are a sufficient number of very extremely shocking instances of the result of "cleaning" windows of as late date as the fifteenth century, even by careful hands. I have in my possession a pane of late fifteenth century glass (133), which was apparently in good condition when it came into my possession, but on being steeped in water a few minutes, and then held for a moment under a tap of cold water, the whole of the paint washed off, leaving only the yellow stain, and the marks where the paint had been. And yet the surface of the glass is as bright, or as Mr. Winston would say, "as clear as the day it was put up." What then of such glass as is visibly decayed and perishing? A touch of the finger is sufficient to peel off even the inner (and therefore most protected) surface, and with it, of course, the picture painted

^a Under this now become offensive term I do not of course include the ingenious and intelligent repairer or preserver. Where the lead of an old window has become defective and the glass loose and in danger, I should be the last to otherwise than sincerely sympathize with its being re-leaded and properly preserved.

^b See a report by the present writer, in *Athenæum*, 29 March, 1873.

thereon ; and there can be no question that, in cathedrals and other large churches in England, where there are movable stages and men systematically employed to scrub and brush all over, the windows are often irreparably injured. It is not merely that the dust is removed—though that were unnecessary, for fine dust deposited upon the glass and leaded frets, so far from detracting from the beauty of the windows, adds to them a peculiar richness, softness, tenderness, mellowness, and grace ;—it is that, with the dust, the paint, loosened by decay, is also removed.^a They have not this pernicious custom, I believe, abroad. The cathedral at Amiens, for instance, certainly looks as though it had never been dusted since it was built, and yet the painted glass, chiefly of the thirteenth century, is truly exquisite, and far clearer and more distinct than that at York. One great secret of its beauty is that it is let alone, and, if this simple plan is found to answer there, why should it not elsewhere ? Paint, even if cracked and fissured, is not so easily brushed off canvass as decayed paint is from glass. Why then, if no one would ever think of setting an ignorant labourer to brush a valuable oil-painting with a dirty scrubbing-brush, should it be thought not amiss to treat old painted windows so ?

d. In connection with the intelligent Preservation of ancient Glass. If the various kinds of ancient glass could have been simply let alone, in the position and circumstances for which they were made, it is difficult to say for how many centuries they might not have lasted. The action of a pure atmosphere is extremely slow ; and in ancient times, when the population was comparatively thinly scattered and there were no poisonous manufactures, the atmosphere was pure ; such was the construction of ancient buildings, that even in them the air was constantly kept pure also. It has been reserved for us to invent methods of “warming and lighting” which shall create atmospheres alike poisonous to animal life, and destructive to works of art of every kind in almost every known material. Formerly it was thought sufficient to light a church with oil or candles, or to light only the portion of a church in actual use, and that portion only sufficiently to enable service-books and music to be read ; but now a whole

^a Some years ago it was warmly discussed whether the Fairford windows had not been injured by washing. There is no question that many windows in many churches have been so injured. In the last century, especially, it was thought only right that the windows should be washed regularly. The following entries are from the Wakefield Churchwardens' Accounts :—“1634. For dressing of the leads and the Church windowes.” “1619. Paide for sweepeing the church walles, wyndowes, and the leads dyvers tymes, vijs. iijd.” “1742. Pd. Thos. Moyl Appren^e for cleaning y^e Church Windows, 2s.” “1768, Robert Newman W^{te} wash'g windows, 1s.”

building must be lighted, lighted up like a theatre, and that by the most corrosively fuming material that has ever been discovered. Thus it constantly happens in churches built under the influence of "the Gothic Revival," in which the windows are glazed with "cathedral glass" or there are painted windows, that after a while the maker of the windows is sent for to see them running down inside with water or encrusted with film, or with the paint peeling off in handfuls, because, it is alleged, faulty construction of the windows lets in wet from the outside. But each pane of glass is cemented into the lead, the windows are water-tight, and the damp and its consequences are really due to the condensation of breath holding gas-fumes in solution, disappearing as soon as proper ventilation (seldom in the first instance thought of in modern buildings) is introduced.^a Similarly, coke stoves and gas are constantly introduced into old buildings, out of all proportion to any (if any) additional modes of ventilation inserted to counteract their ill effects. Thus corrosive vapours accumulate, even in buildings of great size, as is proved by innumerable instances (too familiar) in which not only glass, but metal, stone, bindings of books, paintings, etc. have been destroyed. In York Minster may be seen, at the present moment, upon the exquisitely wrought monument of Archbishop Savage, thick crusts and stalactites consisting (as has been found on analysis) of the sulphates of lime and magnesia, which can only have been produced by the action of gas or coke-fumes on the magnesian lime-stone of which the monument is constructed. The same fumes, from the quantity of carbonic acid and watery vapour which they contain, are particularly injurious to ancient painted glass. If glass slightly decayed be kept in a room lighted by gas, the process may be watched as it advances but too rapidly, and it is the more serious in the case of glass *in situ*, because it affects exclusively the inside of the pane, dislodging the paint, and thus destroying the design. Gas-fumes are, however, extremely injurious not only by reason of their chemical composition, but also by reason of their intense heat. It has been shown already how easily the inner surface of decayed glass may be detached by slight mechanical violence. Alternations of heat and cold have a like effect. It is a modern idea that a row of lights running along between the arcades and clerestory windows has a fine effect. One of the effects is that whilst the frosts

^a It is not breath alone which thus condenses on the inside of windows. Mr. Hughes, of London, was the first to point out to me the sooty smell and treacly consistence of the condensed vapour on windows in modern churches. He tells me that on more than one occasion he has been sent for to see windows in the condition described above, and that, on inserting a ventilator near the roof at each end of the building, the damp has disappeared immediately, and not returned.

and chills of winter contract the outsides of the windows, the heat of the gas bakes them within, and, by the unequal expansion of the two sides of the glass thus occasioned, quantities of the inner corroded portions with the paint attached are peeled off. We cannot then have it both ways, and if we will neither be satisfied with such simple modes of lighting as for centuries were good enough for our forefathers, nor with moderation of what we admire more, we must be content to give up, and lose for ever, what otherwise might have stood for the admiration of centuries yet unborn.

At the conclusion of this too incomplete Essay, written in the scanty leisure of a laborious and engrossing profession, I must express my obligation to Augustus Wollaston Franks, Esq., F.R.S., Director of the Society of Antiquaries, for having facilitated my examination of the glass in the Slade Collection, and other departments of the British Museum; to Alfred Charles King, Esq., F.S.A., and R. H. Soden Smith, Esq., F.S.A., for having assisted me in similar researches at the South Kensington Museum; to John Henderson, Esq., M.A., F.S.A., for leave to examine his rich collection of ancient iridescent glass from Italy and Greece, and for the loan of his magnificent specimens of iridescent Roman window-glass; to John Evans, Esq., D.C.L., F.R.S., F.S.A., for several valuable specimens of decayed Roman and Gothic glass; to Andrew Hamilton, Esq., of Kelvedon, Essex, for the loan of illustrative specimens and for several happy suggestions; to Sir John Lubbock, Bart., F.R.S., F.S.A., and the Rev. Canon Greenwell, M.A., F.S.A., for specimens of prehistoric glass; to Edward Peacock, Esq., F.S.A., of Bottesford Manor, for several interesting specimens, and for information respecting the buried glass bottles found at Bottesford; to Fairless Barber, Esq., F.S.A., secretary of the Yorkshire Archæological Society, for the first and one of the very best specimens of crumbling Gothic glass I ever saw; and to Messrs. Ross and Co., of London, and Messrs. Negretti and Zambra, of London, opticians, for specimens of "mildewed" lenses. The drawings for the illustrations have all been made direct from original specimens, either by myself, or with the skilled assistance of Mr. Hall, of Wakefield. Doubtless with additional specimens, and still greater facilities, more might be discovered; but in the mean time I submit this as a contribution to our knowledge on the subject, with grateful thanks to those many friends who have assisted me, and made this study of the subject a pleasure and amusement.

ILLUSTRATIVE EXAMPLES.

The following illustrative examples have been selected and arranged so as to show as clearly as may be the gradual development of each form of decay, and the circumstances which determine it. Where not otherwise stated, the microscopic appearances are visible under a low power; one magnifying, say, about thirty diameters.

A. SPECIMENS ILLUSTRATING THE PROCESS OF DECAY.

1. *Filmy, Blistering, or Iridescent Decay.*

1. Modern common thin white window-glass, from an ash-pit. On the more corroded side the surface has lost its polish and become white, showing under the microscope, 1. A vast number of dull spots of irregular shape, at first separate, then running into one another; 2. Dulness in the lines of multitudinous striæ crossing and re-crossing in all directions; 3. Minute, dull circular spots, about $\frac{1}{5000}$ of an inch in diameter, extending in concentric circles, proved to be hollow filmy blisters when seen in section here and there where the uppermost layer has broken away. On the less corroded side the general surface is dull, but the striæ stand out bright and untouched.

2. Modern common thin white window-glass, picked up from mould in Chel-morton Churchyard, Derbyshire, by F. Barber, Esq. F.S.A. Fine brown earth adhering, and inseparable without removing the surface of the glass beneath.

3. Similar to Ex. 1, but more advanced, and with the outermost layer removed; showing a surface beneath blistered and blistering into richly iridescent films.

4. Similar to Ex. 2, with the outermost layer removed; showing a mass of iridescent film and blister, the latter as yet unbroken.

5. Two pieces of modern black bottle-glass from the bottom of a pond near West Halton Rectory, Lincolnshire. They are brilliantly iridescent. The more superficial layers scrape off easily with a pen-knife, but the deeper are removed with greater difficulty, showing the surface beneath like finely ground glass. Films red by direct are green by transmitted light; pink-purple by direct—greenish-yellow by transmitted; purple by direct—yellowish-green by trans-

mitted; blue by direct—yellow by transmitted; green by direct—red and pink by transmitted; yellowish-green by direct—bluish-pink by transmitted; yellow by direct—blue by transmitted; orange by direct—bluish-green by transmitted light. (Presented by the Rev. James Murray, rector of West Halton, Lincolnshire.)

6. Several specimens of window-glass found in a vineyard near Pozzuoli, in the neighbourhood of the Lago d'Angano, South Italy. The surfaces outside are brown and quite opaque, but inside, where the outer coating has been removed, gorgeously iridescent. A very few spots of pitting decay on one of the fragments. (In the possession of John Henderson, Esq. F.S.A.^a)

7. Films from a Roman lachrymatory, not thin enough to be iridescent, showing cavities above and convexities below—for the most part irregularly polygonal in section,—sections of blisters varying in size from $\frac{1}{2000}$ to $\frac{1}{200}$ of an inch in diameter, by which they have been separated from other films, inclosing in their thickness several as yet unbroken blisters which show black crosses by polarized light (Fig. 10). A fine brown earth adheres to the surface of the lachrymatory, and cannot be separated without detaching a quantity of the decomposed surface beneath. (From Rome.)

8. Coloured films from antique glass dug up near Rome, for the most part of large size, about $\frac{1}{100}$ of an inch in diameter, flat, and each of one uniform colour.

9. Films from Roman glass dug up near the Via Appia, Rome. Colours very rich and brilliant, showing purple, deep-blue, light-blue, green, yellow, lemon-yellow, orange, and rose-pink by transmitted, and the complementary colours by reflected, light. The surfaces of some are undulated, of others corrugated; the former appearance being caused by unbroken blisters, the latter by broken ones—varying in size from $\frac{1}{2000}$ to $\frac{1}{100}$ of an inch in diameter, which here appear in horizontal section. The lines of corrugation show either a lighter or darker colour than the rest of the film, or a colour entirely different, or a play of colour. Most of the films consist of still thinner films; in one, sixteen are counted, in another nineteen. The greater the number of films there are of one colour, the deeper is the colour of the whole; but, when two films or sets of films of different colours overlap, the tint is a mixture of the colours, yellow and blue producing green; pink and blue, purple; yellow and red, orange, and so forth. Here and there an unbroken blister may be seen in the thickness of a

^a Now forming part of the collection bequeathed by Mr. Henderson to the British Museum.

film, showing a black cross by polarized light, with a tint around it complementary to that of the general tint of the film. In several of the films, where the blisters are very crowded, they appear in section as polygonal. (Presented by the Rev. H. G. W. Aubrey, of Hale Rectory, Salisbury; formerly in the possession of Sir David Brewster.)

10. Section from the edge of a piece of modern bottle-glass taken out of the moat of Walton Hall; showing bundles of iridescent films lying parallel and closely packed like the leaves in a book. (From a specimen in the possession of Mr. W. Fennell, Wakefield. There are several specimens of Roman twisted glass in the British Museum, showing the same appearance following the spiral of the twist.)

11. Films from Roman glass boiled in nitro-hydrochloric acid, in order to rid them of foreign matter and make them perfectly clean and bright. Colours extremely pure and brilliant.

12. Iridescent fragments of extremely thin, ribbed, blown glass, of Venetian manufacture, picked out from a large quantity of old buried glass found in the ruins of Old Basing House, Hants, by A. Hamilton, Esq.

13. A pane of modern crown glass, from a stable window. The inside surface, by reflected light, is brilliantly iridescent, covered for the most part by three tracts, of irregular shape and outline, one deep rose-colour, another bright apple-green, and the third blue; the complementary colours showing by transmitted light. Under the microscope much of the original surface is seen to have been lost by peeling off of films, the rest remaining intact, in the form of numerous islands of irregular shape, and striæ. Beneath the surface, throughout, are seen innumerable minute blisters and films in process of separation. Films, when separated, as Ex. 8.

14. A telescope lens, of crown glass. Surface dulled and dim to the naked eye, and under the microscope showing the same appearances as the less corroded side of Ex. 1. (Presented by Messrs. Ross and Company.)

15. A fragment of very heavy, yellowish flint-glass, affected with "sweating" or "rust." Polished surface as yet unbroken, but under the microscope showing dull circular spots and striæ, as Ex. 1. By reflected light, numerous spots and patches are visible, some of them beginning to be iridescent. (Presented by Messrs. Ross and Company.)

16. A lens of specific gravity 3.03, and therefore flint-glass, showing irregular shaped spreading blue patches resembling the irregular shaped greasy iridescent patches made by oil or tar upon the surface of water. The patches are as yet

only visible by reflected light, and do not interfere materially with the use of the lens. (In the possession of A. Hamilton, Esq.)

17. Part of a circular spectacle-glass found under the floor of Bottesford church, Lincolnshire. The polish from both sides almost entirely gone, a few small islands on each side only remaining unaffected, the rest of the surface richly iridescent, and showing under the microscope the same appearances as Ex. 1 and Ex. 3. (Presented by Edward Peacock, Esq., F.S.A.)

18. Glass tubing that has been kept in store for twenty-five years. The interior shows the appearances of Ex. 1 under the microscope. When heated, films peel off the interior, and the glass cannot be worked, though when first made it was easily manageable. (Presented by Messrs. Negretti and Zambra.)

19. A specimen of glass tubing that has been used for the delivery of sulphuretted hydrogen into a solution of ammonia. Condition resembling that of Ex. 18, but with, in addition, a quantity of black sulphuret of lead deposited interstitially.

20. A glass bottle in which strong sulphuric acid has stood for a year or two. At the bottom is a sediment consisting of small white concretionary matter (sulphate of lime), and a gelatinous substance (silica), the alumina, iron, and alkali forming the rest of the corroded portion being held in solution. Several of the weaker acids also decompose glass, combining with the bases and setting silica free. Dumas states that even tartaric acid in certain cases will attack glass too rich in alumina, forming a soluble salt with the latter, which decolorizes the wine and communicates a disagreeable flavour. (*Traité de Chimie appliquée aux Arts*, ii. 568.)

21. A glass bottle in which solution of potash has stood for a year or two. The solution was at first clear, but is now turbid, and has deposited a sediment of films—some thick, gelatinous, imperfectly transparent, and non-iridescent, and others extremely thin, perfectly transparent, and iridescent (silica), with a quantity of brownish amorphous matter (lime and oxide of iron; the alumina and alkalies, together with a portion of the silica—in the form of a soluble alkaline silicate, being held in solution). The stopper of the bottle is fast and cannot be removed, the soluble alkaline silicate formed by the decomposition of the glass of the stopper and neck, in contact with it, having strong adhesive properties.^a

^a "The aqueous solution of potash is kept in bottles with glass or cork stoppers. In either case none of the solution should touch the stopper; for those of glass become in a short time so strongly cemented in that they cannot again be withdrawn; and corks corrode and impart a brown colour to the liquid." (Gmelin, *Handbuch*, etc. iii. 14.)

22. Modern crown-glass acted on by fluoric acid. The disintegrated portion ("fluo-silicic acid and double compounds of fluoride of silicon with the fluorides of potassium, fluoride of sodium, and fluoride of calcium, etc." Knapp, *op. cit.* ii. 9) has been washed off, leaving the surface beneath very uneven, full of innumerable ridges and hollows, and showing numerous striæ and blisters.

2. Superficial Creeping Granular Decay.

23. Ruby glass, fifteenth century, outside. Slightest perceptible dullness or loss of polish in places from abrasion.

24. Quarry, sixteenth century, outside. Surface slightly abraded near the edges where the wet would stand, and black dirt now ingrained and irremovable by washing. (From an old timber-built house formerly at Batley, Yorkshire.)

25. White, fourteenth century, outside. Polish gone and surface rough like finely ground glass, through the microscope showing minute islands of the original surface remaining unaltered.

26. White, fourteenth century, outside. Surface very slightly dull, but showing, by the microscope, striæ of the original surface crossing and re-crossing in all directions, unaltered, like fine threads of bright gossamer.

27. White, fourteenth century, outside. The same appearance, but surface duller, and striæ still brighter.

28. White, fifteenth century, outside. Surface slightly dull and sub-iridescent, but otherwise not perceptibly corroded; under the microscope about half the surface seen to be removed and half remaining, the latter in form of innumerable bright fantastically shaped minute islands, the edges of which, acting as prisms, produce the iridescence observed in this and other similar examples.

29. White, fifteenth century, outside. Uncorroded striæ acting as prisms, and producing iridescence.

30. Shield of arms, 11 in. by 9½ in., fourteenth century, bearing the charge, Ermine, on a chief gules two mullets or. Both surfaces, but especially the outside of the white panes, made beautifully iridescent by uncorroded striæ, as in Ex. 29. Waves and striæ also abundantly shown on uncorroded parts of same. (Formerly in possession of the Very Reverend John Merewether, D.D., F.S.A., Dean of Hereford.)

31. Blue, late fifteenth century, outside. General surface bright and unaltered, but showing near the centre, under the microscope, excavated striæ cross-

ing and recrossing in all directions, dull, like minute scratches or fine gossamer threads.

32. White, fifteenth century, outside. General surface bright and unaltered, but showing lines of corrosion and gossamer threads of all degrees of fineness, from those easily visible to the naked eye to those which are invisible.

33. White, fourteenth century, inside. General surface cut up by intersecting lines of gossamer, corrosion rapidly extending in width and depth.

34. White, fourteenth century, outside. Advanced decay, general surface as in Ex. 25, 26, and 27, with deeper and wider lines of corrosion, as in Ex. 32.

35. Circular ornamental panel, 8 inches in diameter, fourteenth century, outside. Advanced decay, still progressing; some of the panes coated with white efflorescence, of strongly alkaline taste, instantly rendering pink litmus blue, while others from which the latter has been removed are left dull and hazy. (Formerly in the possession of the Very Reverend John Merewether, D.D., F.S.A., Dean of Hereford.)

36. White, mealy efflorescence from Ex. 35, after being digested in acid. Magnified 430 times, it is seen to consist of particles varying in size from $\frac{1}{400}$ of an inch downward. The larger particles are perfectly clear and transparent, with roughened surfaces from which other like particles have been conchoidally split off, and are obviously fragments of as yet undecomposed glass; the smaller, too minute for measurement, and quite amorphous, are doubtless silica. This view is substantiated by the mixed powder, heated before the blowpipe, being resolved into a fusible portion, and into an infusible unalterable portion; the former running here and there into small beads, easily seen by a pocket-lens, interspersed through the midst of the latter.

3. Deep Creeping Granular Decay.

37. White, yellow stained, fifteenth century, outside. Thin serpiginous patches eating through yellow stain; surface around as in Ex. 29.

38. A shield of arms, 11 inches by $9\frac{3}{4}$ inches, early fourteenth century; bearing the charge, Ermine, two bars gules. The ruby glass is extremely beautiful, some of the panes showing the colours distributed in curling wreaths crossing and re-crossing in all directions, the edges (as fine as hairs) of the wreaths being bright scarlet; others, showing edges of wreaths dark or almost black; and others, an uniform distribution of intensely bright brilliant and glowing scarlet. On the outside, all degrees of deep creeping granular decay

are seen in progress; incipient loss of transparency, semi-opacity, formation of thick crusts whilst the surface remains still smooth and unbroken, exfoliation (Fig. 1, a, a, a), exposure of uneven surface beneath (Fig. 1, b, b, b), and renewed decay. The parts from which crusts have separated, when seen by transmitted light, have a rich silvery or pearly appearance.

39. Portion of white crust from the same, digested in nitro-hydrochloric acid. Finely divided particles left, precisely similar to Ex. 36.

4. Spotty, or Pitting Granular Decay.

40. Pink, fourteenth century, outside. Surface bright and clear to the naked eye, but under the microscope showing minute, transparent, circular spots of incipient decay, extending in concentric circles from within outwards.

41. White, yellow stained, early sixteenth century, inside. More advanced decay; outlines of spots and concentric rings extremely well defined.

42. Ruby, fifteenth century, outside. Very clearly and well defined transparent spots of incipient decay, showing advance by concentric rings; some spots beginning to be opaque in their centres, others quite so throughout, but by reflected light appearing white and semi-crystalline like saccharoid marble.

43. Green, fourteenth century, outside. The same, equally clearly and beautifully defined, but the spots now all opaque and white, or greyish-white, by reflected light.

44. Blue, fifteenth century, outside. Well defined, circular, fully formed spots, beginning to disintegrate in their centres.

45. Ruby, fifteenth century. Spots disintegrating, and forming pits more or less thickly lined with white, spar-like, sparkling matter.

46. Ruby, fourteenth century, outside. Spots larger, and pits deeper; disintegration about half completed.

47. White, fourteenth century, outside. Spots in all degrees of nearness; separate, approximate, or running one into another (in the latter case simulating creeping decay), and in all stages of progress,—not fully formed, formed, beginning to disintegrate, and completely excavated; those that are disintegrating exhibiting every variety of fantastic appearance,—deep pits with overhanging edges lined with spar-like matter, serpiginous hollow tracks formed by union of several excavating pits occurring side by side, excavation in rings between the

centre and circumference of spots leaving central pillars free and detached with mushroomlike heads, excavation in two, three, four, or more concentric rings, and lastly, excavation in radii proceeding from the centre to the circumference--in one place ten are counted.

48. White, fourteenth century, outside. The surface almost entirely covered with completely and cleanly excavated discrete spots leaving cup-shaped cavities of various depths, averaging about one-eighth of an inch in diameter (Fig. 2).

49. White, thirteenth century, outside. Excavated discrete spots, or pits, shallow, with perpendicular or undercut sides; some of them, as in the last instance, more than half the thickness of the pane in depth, and varying from about one-eighth to one-fifth of an inch in diameter (Fig. 3).

50. Green, fourteenth century. Deep round pits, or wells, like worm-holes, about one-thirtieth of an inch in diameter, left by the disintegration or shelling out of spots of decay (Fig. 4).

51. A yellow glass bead of early Iron period, from the cemetery at Hallstadt. It is not much corroded, but shows here and there a deep pit of very irregular shape, cleanly excavated. (Presented by Sir John Lubbock, Bart. F.S.A.)

52. Powdery matter thrown out of excavating spots in glass of the fourteenth century, treated with the nitro-hydrochloric acid. Result as in No. 36 and No. 39.

53. White, thirteenth century. Spots confluent and excavated; much of the surface destroyed, leaving a worm-eaten appearance (Fig. 5).

54. Flashed ruby, fifteenth century, outside. Flashing almost entirely destroyed over the whole surface by the excavation of confluent spots, leaving minute irregular shaped islands of bright ruby here and there (Fig. 14).

55. A blue glass bead of late Celtic or early Iron period, one of seventy, found in a barrow at Cowlam, East Riding of Yorkshire, round the neck of an aged woman, on whose right wrist was a bronze armlet, and at whose neck near the chin was a bronze fibula. It is eaten by corrosion, and pierced by holes like a piece of sponge. It shows 1. Spots of all sizes quite opaque by transmitted and yellowish-brown by reflected light; 2. The same in all stages of excavation, deep hollows and pits lined with more or less coarsely granular or spar-like yellowish-brown matter; 3. Large excavated chambers communicating with one another by passages produced by the breaking up of decayed matter, and crossed or intersected by pillars, beams, or buttresses of spar-like matter; 4. clear hollows, pits, and cups formed by the total excavation of decomposed matter.

The portion as yet uncorroded is as hard and sound as the day it was made, and, when fully illuminated, is of a beautiful sapphire tint. (Presented by Canon Greenwell, and referred to by him at p. 208 of his work on British Barrows.)

56. A string of ancient Egyptian blue glass beads, from a mummy. Some are but little decayed, but most of them are extensively so, whilst a few are riddled through and through with intercommunicating holes of all sizes.

57. Blue, fourteenth century. Outside surface all but entirely destroyed by excavation of confluent spots, and inside by superficial creeping decay; in several places the whole thickness of the pane being as nearly as possible eaten quite through—in the thin places could be pricked through with a pin (Fig. 6).

58. Two panes, fifteenth century, outside. Surface roughened by decay, and a golden lichen spreading over and covering about a third.

59. Two panes of yellow, early fourteenth century, showing the second and third forms of granular decay in an advanced stage. The panes are all but entirely opaque. Minute glimmerings of colour are here and there discernible through breaks in the outer crust, but the elegant foliage pattern, though itself little injured, is altogether invisible by transmitted light. (These panes are of the same date, and affected by the same form of decay, as the chapter-house windows at York.)

5. Splitting, or Crackling Granular Decay.

60. White, fourteenth century, inside. Surface bright and, to the naked eye, uncorroded, but, when magnified 90 diameters, showing extremely minute black nuclei forming centres of circular areas of discoloration not more than $\frac{1}{2000}$ of an inch in diameter, and of stars of three, four, five, or more points, the largest about $\frac{1}{300}$ of an inch in diameter, just beneath the surface, with a black offshoot from the nucleus running down the centre of each (Fig. 15).

61. Pink, fourteenth century, inside. Incipient spots, with cracks radiating outwards from their circumferences.

62. White, yellow stained, fifteenth century, inside. Incipient spots with cracking and splitting radiating outwards from their centres, but limited by their circumferences.

63. White, fourteenth century. Spots with black nuclei, splitting the glass outwards from their circumferences. (Found buried beneath the floor of Winterton church, Lincolnshire, in 1849.)

64. White, fifteenth century, inside. Incipient spots with black centres,

splitting from the circumference outwards. Between these, a quantity of dark brown deposit scattered through the substance of the glass beneath the surface, but as yet not in sufficient quantity to cause splitting. The outside of the pane shows a granular appearance, with striæ (Ex. 26), produced before the glass was buried. (Found buried under the floor of All Saints church, Wakefield, in 1874.)

65. White, fifteenth century ; seen in horizontal section. Spots varying in size from $\frac{1}{2000}$ to $\frac{1}{100}$ of an inch in diameter, the latter showing as many as from fifteen to twenty-five concentric rings around dark nuclei, the largest of the latter being about $\frac{1}{200}$ of an inch in diameter, with dark matter between the rings. (From Northallerton, co. York. Fig. 16.)

66. Portion of unaltered core of same, from which spots with concentric rings have been broken off, showing conchoidal fracture, and concentric striæ where the rings have been.

67. Perpendicular section through about one-third the thickness of a pane of the same glass, showing dark brown dendritic prolongations descending from the surface into the thickness of the glass, ramifying in its substance, and splitting it. (Fig. 17.)

68. Fragments of a ribbed wide-mouthed tumbler with a convex base, of thin sea-green glass, in some parts scarcely if at all corroded, in others iridescent, or dark and discoloured. With the microscope, we observe 1. Much granular spottiness, dulness in the lines of striæ, and minute blisters, as in Ex. 1; 2. The same appearances as in Ex. 2 and Ex. 3; 3. Black spots separate or running one into another, with concentric rings round, as in Ex. 65; and 4. Much general brown superficial interstitial discoloration, as in Ex. 64. (Presented by John Evans, Esq., F.R.S., F.S.A. The glass is of Frankish make, and was found in the neighbourhood of Beauvais.)

69. White, fifteenth century ; part of a banded quarry with a star in the centre ; both sides. Ringed spots of minute size, as in Ex. 65, so close together as to render the pane nearly opaque, but not breaking the surface. (From Netley Abbey, Hants; in the possession of H. S. Harland, Esq., Brompton, Yorkshire.)

70. Blue, fourteenth century, inside. Spots small, but extremely numerous, and each throughout so full of dark matter as to be absolutely opaque. (In the possession of A. Hamilton, Esq.)

71. White, fourteenth century, outside. Without either nuclei or spots; the surface is split up in every possible direction, the cracks being full of dark

matter; appearance under the microscope very like that of crackle-glazed earthenware. (Found in excavating during the restoration of Boyton church, Wiltshire; presented by the Rev. E. S. Wilson, Winterton Vicarage, Lincolnshire.)

72. White, fourteenth century. Surface entirely covered with brown spots and general crackling. (From same place; presented by the Rev. E. S. Wilson.)

73. Ruby, fourteenth century. Similar appearances. (In the possession of A. Hamilton, Esq.)

74. Portion of a white quarry, diapered with oak-leaf and acorn, fourteenth century. Perfectly black and opaque throughout its entire thickness, the decay having extended inwards simultaneously from both sides of the pane, to the centre; the whole would crumble between the finger and thumb into a black sand. (Found buried in Chelmorton church, Derbyshire; presented by Fairless Barber, Esq., F.S.A.)

75. Eight pieces of white, red, blue, and green glass, showing stippled shading, part of a finger, fragment of ornamental border, of quarry with oak-leaf and acorn, black-letter inscription, foliage, etc.; fifteenth century. All in the same condition as the last. (Found buried, in 1875, on the site of Northallerton Priory chapel; presented by W. T. Jefferson, Esq., the present owner of the property.)

76. Coarse black sand of decomposed glass, from similar specimens.

77. Transparent thin cores of glass, left in the centres of some of the panes from which such sand has been rubbed off.

78. Ten pieces of grisaille pattern very strongly outlined, three lobed leaves and ground filled in with cross-hatching; thirteenth century. Condition as Ex. 73 and Ex. 74; but, in addition, interspersed amongst black amorphous matter are portions of confusedly and indistinctly developed filmy decay, the films small, indistinct, and uneven, brilliantly orange-yellow or metallic-looking, and lying in all directions without order like scales of bran in the texture of a coarse wheaten loaf. (Found buried, in 1873, on the site of Stixwold Nunnery, Lincolnshire; presented by John Bramley, Esq., of Stixwold.)

79. Fragments of white glass, showing crackling, mixed with confusedly filmy decay. (Found in an excavation on the site of the Chapter House, Thornton Abbey, Lincolnshire, by the Rev. J. T. Fowler, M.A., F.S.A.)

80. Fragments of white glass, fourteenth century, with oak-leaf, showing the same, from old Malton Abbey, Yorkshire. (In the possession of H. S. Harland, Esq.)

81. Two pounds and one ounce of glass found in the course of excavations at Newminster Abbey, Northumberland, chiefly on the site of the Chapter House, by the Rev. J. T. Fowler, M.A., F.S.A., in 1878. With the exception of three small panes of green, the whole has been, apparently, white glass, consisting chiefly of the remains of thirteenth century white quarry glazing, ornamented with conventional trefoil foliage very strongly outlined, the ground of the quarry being covered with cross hatching of dark lines. One or two small fragments of other simple patterns also occur. The panes vary in thickness from about one quarter to one-sixteenth of an inch in thickness, the latter (of which however there are several specimens, all of similar texture to the rest and cut with the grozing iron) being remarkably thin for this early period. Some of the thicker panes are very unevenly cut, with a coarse conchoidal running fracture. One piece has a straight, smooth, rounded edge; showing 1. That it must have been blown in a cylinder, and not flashed in a round, as now; and 2. That, for the sake of economy, the glass was used up to its extreme edge or selvage. Nearly the whole of the glass is quite opaque, in consequence of very advanced granular decay, and some of it is quite pulverulent; here and there, however, are pieces in which coarse shelling decay predominates over the granular form. Many of the panes show pitting decay in various stages completed before the burial of the glass.

82. Seven fragments of fifteenth century white, blue, and flashed ruby. Decay, splitting or crackling, but mixed here and there with subiridescent confusedly filmy disintegration, the films in some places parallel with the surface of the glass, and in one place showing, where the coating has peeled off, brilliant colours in minute disjointed patches. (From excavations at Finchale Priory, Durham.)

83. Pane of green glass, showing a condition similar to the last. (Picked up from an excavation at Tintern Abbey, in 1871, by John Binks, Esq., of Wakefield.)

84. Nine pieces, showing thirteenth century grisaille and fourteenth century oak-leaf and acorn. Decay as Ex. 74 and Ex. 75, but with a good deal of iridescent confusedly filmy disintegration, and of pitting of earlier date than the removal of the glass from the windows to which it belonged. (Some found in the wall of Bottesford church, Lincolnshire, and the rest dug up in the churchyard; presented by Edward Peacock, Esq., F.S.A.)

85. A fragment of buried Gothic window-glass, from the neighbourhood of Beauvais. Decay substantially as in Ex. 74 and Ex. 75, but with traces of film here and there. (Presented by John Evans, Esq., F.R.S., F.S.A.)

86. Scales from Ex. 78 boiled in nitro-hydrochloric acid. Orange-yellow matter dissolved out, and transparent fairly iridescent scales of silica left.

B. SPECIMENS ILLUSTRATING THE COMPOSITION AND TEXTURE OF DIFFERENT MAKES OF GLASS, AND CIRCUMSTANCES ACCELERATING OR RETARDING THE PROCESS OF DECAY.

87. A fragment of ancient crystalline glass, of extreme thinness—less than one-sixteenth of an inch, and nearly colourless, from the Mosque of S. Sophia at Constantinople. Very rich iridescence on both sides.

88. Fragments of Roman window-glass, showing one surface uneven and dull as if cast on a stone, the other perfectly bright and without visible decay. (Picked up in 1876 and 1877, by the Rev. J. T. Fowler, M.A., F.S.A., at the stations of Cilurnum and Hunnum, on the Roman Wall.)

89. A circular medallion, middle thirteenth century, outside. Surface of every pane entirely removed by superficial creeping granular decay, but colours (pink and blue) still pure and bright, and painted patterns clear and distinct. (Formerly in the possession of the Very Reverend John Merewether, D.D., F.S.A., Dean of Hereford.)

90. The larger half of a canopy of red, blue, yellow, green, pink, and white glass, middle thirteenth century. One of the panes of ruby is a particularly fine example of that kind in which the colour is distributed in tongues, leaving interspaces of white glass devoid of pigment. No perceptible decay on the outside of several of the panes, though there is slight creeping decay on the inside of most of them. (This glass came originally from a church in France, and there is more of the same in Wilton church, Wiltshire. Engraved for coloured illustration in Winston, *Inquiry, etc.* vol. ii. pl. i. fig. 2).

91. Fragment of green Roman glass, covered with richly iridescent filmy decay, in the midst of which in one place are many small pits excavated by granular decay. (From Rome.)

92. Quarry, seventeenth century, outside; showing superficial creeping granular decay. (From an old timber-built house in Yorkshire.)

93. Quarry, seventeenth century, outside; showing superficial creeping granular decay. (From a cottage window in Hampshire.)

94. A flask-shaped bottle of yellowish-green glass with the bottom pushed in in order to make it stand, spotted all over with brown crackling decay, which in many places has peeled off, leaving the surface beneath rough like that of the

cores (Ex. 66, 77) previously described. (Found in digging for the Thames Embankment; presented by T. W. U. Robinson, Esq., F.S.A., of Houghton-le-Spring.)

95. Fragment of decay from the same, showing under the microscope deep brown stain and brown concentric rings surrounding centres of decomposition (Ex. 65); in some places, where circles are closely adjacent, rings round both centres, and sets of rings, have been formed, like the rings round knots in a section of walnut-wood or pollard oak.

96. A bottle, in shape and size closely resembling Ex. 94, found with several others in pulling down an old house at Lincoln. When first discovered, it was about half full of a colourless liquid, nearly tasteless, but of a slightly aromatic smell, with films of silica and flocculi of peroxide of iron from the decomposition of the interior of the bottle, mechanically suspended.

97. A flask-shaped bottle of coarse texture and rude manufacture, resembling Ex. 94, but smaller, and covered with similar decay; bearing a glass seal inscribed "Richard Beach, 1703." (Presented by Edward Peacock, Esq., F.S.A. In the York Museum there are four bottles, closely resembling these, all affected with apparently the same kind of decay.)

98. A similar bottle, discovered in *débris* belonging to the period of the great fire in London, covered with iridescent decay. (In the possession of Mr. W. Fennell, of Wakefield.)

99. A green glass seal off a wine bottle, bearing the arms, Fretty, a canton, impaling three escallops; with crest, a garb between two wings; for John Middleton, Esq., of Stockeld, and his wife Jane, daughter of Sir Thomas Strickland; latter half of seventeenth century. When first found, in the soil of a garden, it was entirely coated with brilliant iridescent decay, but a good deal of this has worn off; some still remains, however, on both sides.

100. Quarry, fourteenth century. Rich full sea-green tint remaining after the addition of manganese in quantity insufficient to oxidize the whole of the protoxide of iron in the glass.

101. Part of a shield of arms, fourteenth century. The green tint of the glass all but entirely neutralized, a faint tinge only of yellow communicated.

102. Quarry, fifteenth century. Deep yellow tint, caused by the whole of a large quantity of iron in the glass having been peroxidized by manganese.

103. White, diapered with ermine spots, part of a shield of arms, fourteenth century. Pink or faint rose tint, from excess of manganese, hiding the yellow tint produced by peroxidized iron. (Out of the same window as Ex. 100 and Ex. 101.)

104. Part of a pane of plate glass from the Duke of Newcastle's house, London, inserted circa 1800. It is of a deep purple tint, except at the edges, where it has been covered by putty and is still colourless. (Presented by Henry Hughes, Esq., of London).

105. Large pane of glass of rich sea-green tint, with wide double bend in its lower third, and three tracts of yellow stain; fourteenth century. Spotty decay, not grey as usual, but brick-red, in abundance upon the upper surface of the bend where the water has run down and stood, but little or none elsewhere, and creeping decay round the edges of the yellow stain, which, however, it has been unable to invade. (Fig. 11. In the possession of A. Hamilton, Esq.)

106. A pane of early fifteenth century glass, of sea-green tint, doubly bent, on which is painted a demi-angel emerging from a cloud. (Fig. 12. Presented by A. Hamilton, Esq.)

107. Large pane of white glass, varying in thickness from one-sixteenth to three-fourths of an inch. It is probable, but not certain, that the thick side of the pane may have been near a bull's-eye. It is not easy to see how it can have been leaded with others, but it has certainly either been so, or fitted alone into a tracery compartment. It is painted with a foliage ornamental pattern of bold type. The tint varies with the thickness from the lightest to the deepest sea-green, and has an extremely good effect. (Fig. 13. In the possession of A. Hamilton, Esq.)

108. Pane of streaked ruby, fourteenth century. The thickness varies from three sixteenths to a quarter of an inch in thickness.

109. Pane of extremely choice fourteenth century ruby, showing colour distributed in curling wreaths crossing and re-crossing in all directions; the edges (as fine as hairs) of each wreath dark or almost black, but the rest of a most brilliant crimson-scarlet.

110. Section of ruby, early fourteenth century. In the thickness of the pane, $\frac{1}{8}$ of an inch, one hundred and forty-three planes of different density may be counted; fifty-five coloured, and eighty-eight uncoloured. (Fig. 18. The illustration must be understood to be more or less diagrammatic; it is impossible, by means of lines, to give the beautiful effect which, in the original, is produced by tracts of luminous colour, of bright light, and of shade, entirely devoid of outline.) Under a higher magnifying power, and by careful adjustment of focus, each uncoloured stria, but most clearly the larger and separate ones, are seen to be resolved into nine different portions, as follows (Fig. 7.) :—*aa*, apparently homogeneous matrix; *bbbb*, darker portions on each side of each edge; *cc*, darkest

portions forming edges of stria; *d*, bright luminous core. Each uncoloured stria being thus composed, we have $88 \times 9 = 792 + 55$ coloured layers = 847 layers; or, if the coloured layers are also thus composed, $143 \times 9 = 1287$, total number of layers of different density in one pane of glass $\frac{1}{8}$ of an inch in thickness.

111, 112. Two thin horizontal sections of ruby, early fourteenth century, further showing want of homogeneity and unevenness of the planes in which the colouring matter is distributed. [It may be well to remark here, in reference to the view advanced by some, that the colour of ancient ruby glass is due to the presence of copper in the metallic state, very finely divided (Winston, *Memoirs*, p. 226), that no trace of particles can be seen in either of these specimens, at least when magnified up to 7000 diameters; the copper appearing under that power to be held in solution as a true silicate, just as iron in sea-green glass, cobalt in blue, etc. Can the idea that the colour is due to metallic copper, have originated in a too rash inference from the fact that pure metallic copper is present in the form of crystals in aventurine glass? (Ex. 113)]

113. A specimen of aventurine glass. To the naked eye, it appears as a transparent medium filled with small spangles, which give it a peculiar shining appearance. Under the microscope, metallic copper, in the form of brilliant cubic and regular octohedral crystals, is seen disseminated through a clear, crystalline, uncoloured matrix.

114. Section of vitreous slag, half an inch thick, from an iron furnace, showing by reflected light, with an ordinary pocket lens, one hundred and eight parallel planes of different colour and density; fifty-four of a dark-blue, and the rest of a light greyish-blue colour. The resemblance between the forms and disposition of the layers in this and in the section of ruby (Ex. 110) is very exact. A thin section, under a high magnifying power, would probably show a much larger number of layers.

115. Thin section of flint, translucent and semi-vitreous, showing by polarized light, with selenite plate, striking effects of colour indicating want of homogeneity.

116. Thin section of agate, transparent and semi-vitreous, showing by polarized light, both with and without selenite plate, striking effects of colour indicating want of homogeneity.

117. Thin section of carnelian, half an inch wide, showing one hundred and sixteen bands of colour, arranged in parallel planes, so as closely to resemble the disposition of colour in Ex. 110.

118. Thin section of precious opal, disseminated through a porphyritic matrix,

showing, both by reflected, transmitted, and polarized light, striking effects of colour indicating want of homogeneity.

119. Thin section of lapis lazuli, showing by polarized light, both with and without selenite plate, striking effects of colour indicating want of homogeneity.

120. A plate of horn, $\frac{1}{16}$ of an inch in thickness, as used for lanthorns, etc.; obtained from ordinary cow's horn by heat and pressure. It possesses about the same degree of translucency as a pane of fourteenth-century glass $\frac{1}{8}$ of an inch in thickness. The growth of horn is cellular. The deepest part consists of globular nucleated cells, the number of which perpetually increases; by the growth of these, and consequent pressure from within outwards, the cells already formed are more and more flattened as they are thrust towards the surface, until those upon and near the surface become little more than mere flat horny scales.

121. Transverse section of the horn of an American bison, showing innumerable layers, superimposed. That these are of different density is proved by the polariscope. With a selenite plate the colours are extremely splendid.

122. Thin transverse and oblique sections of the horn of a rhinoceros, showing numerous centres—probably corresponding to papillæ of the cutis, each surrounded by concentric layers consisting of flattened cells. Viewed by polarized light, with selenite plate interposed, each bundle of layers exhibits gorgeously contrasted colours, indicating want of homogeneity.

123. A mass of glass sponge, or solidified light blue-green vitreous froth, from the sudden solidification of the contents of a pot which accidentally gave way whilst chemical action was going on during the first fusion of the material, and the glass was thus in a state of brisk effervescence—a mass of air-bells.

124. Fragments of light pink purple, fifteenth century, showing extremely numerous, but very minute, air-bubbles, invisible to the naked eye.

125. Quarry, fifteenth century, showing many bubbles of all sizes, visible to the naked eye.

126. White, fifteenth century, a pane out of the tabernacle-work of a canopy; showing numerous crystals dispersed in the texture of the glass, isolated and separate like the crystals of copper in aventurine glass, but transparent and for the most part also colourless:—1. Prisms terminating in secondary groups of needles; 2. Regularly formed colourless six-sided plates or tables; and 3. Various modifications of these forms. A fragment of the glass, on analysis, has been found to contain both lime and alumina. The crystals are probably definite silicates of lime and of alumina. Their size and regularity imply slow transition of the glass from the liquid to the solid state, the particles having had time to

arrange themselves regularly about those which separated first, and formed nuclei of crystallization (Fig. 8).

127. White, fifteenth century. Similar to the preceding; but crystals more numerous, smaller, and ill-defined, showing a tendency to aggregation.

128. Lump of clear green bottle-glass, such as soda-water bottles are made of, from a slowly-cooled pot, containing—1. Numerous long prismatic snow-white crystals of silky inclining to pearly lustre and foliated structure; 2. Aggregations of two, three, or many such crystals or crystalline shafts set end to end, loosely, so as to form stars of two, three, or more divergent rays; and 3. Aggregations of similar shafts set closely, so as to form globular or spheroidal crystalline masses.

129. A similar mass, but with crystals only in the upper portion, the top part of all being quite white and opaque throughout; white crystals shooting down thence in feathery masses into the transparent matrix beneath, like frost on window panes. Crystallization has here taken place rapidly from the surface, a great number of particles having solidified at the same time, each forming a nucleus to which other portions have attached themselves.

130. Other specimens showing—1. Sharp division into two portions, a lower entirely vitreous, and an upper entirely crystalline, resembling fibrous gypsum; 2. An opaque portion above and below, with opaque bands at irregular intervals running longitudinally in the clear intermediate portion, having extremely minute and closely set crystals shooting upwards and downwards from their surfaces so as to give the appearance of strips of white fur set in the glass; and 3. A mass entirely crystalline, no vitreous portion whatever being visible. The upper portion, or crust, and lower portion, in contact with the bottom of the pot, are perfectly white, solid, confusedly crystalline in appearance, like saccharoid marble; the middle consisting of more or less isolated opaque fibrous prisms and needles shooting from the upper and lower portions, and interlacing in the centre.

131. Section of some of the radiating crystals of Ex. 128, showing, when magnified one hundred and sixty diameters, a feathery structure exceedingly like that of snow crystals, each consisting of a central shaft, about which on each side are aggregated secondary groups of needles (regularly diminishing in length from one end of the shaft to the other—where each series terminates in a point), each attached at an angle of sixty degrees. (Snow belongs, like silica, to the rhombohedral or hexagonal system, amongst its most frequent forms being hexagonal or dodecahedral plates, hexagonal prisms, single, arranged in a stellate form, or terminated by secondary groups of needles, hexagonal pyramids, etc. The

analogy between ice and glass, and between snow and glass crystal, is thus very exact.)

132. Quarry, fifteenth century, of smoky, horny, or chalcedony-like appearance, inclined to milkiness, from excess of lime. (Not more than about six per cent. of lime can be added to glass without risking this defect.)

133. White, part of a canopy, fifteenth century. Surface bright and apparently uncorroded. Superficial creeping decay had loosened, but not detached, the brown paint upon it. Steeped in water for a few minutes, taken out, and then held for a moment under a tap of cold water, every particle of paint washed off, leaving only the marks where it had been, and yellow stain.

134. In the fine collection of enamelled glass of the 16th, 17th, and 18th centuries, in Nostell Priory Church, are many instances where outlines, inscriptions, etc. have first decayed, and then entirely fallen off, their site being now alone discernible by lines of corrosion, in the track of the outlines which have perished. This, it need hardly be explained, is an entirely different process from the chipping off of the jewels from fifteenth-century orphreys, etc. or of enamels—with or without the simultaneous tearing away of the surface of the glass beneath, as in many instances at Nostell. These latter changes are, essentially, mechanical rendings; either followed by decay, or not, according to circumstances.

135. Green, fifteenth century. General surface little affected, but deep creeping decay extending in the sinuous lines of the outlines of the diaper pattern, following exactly, and excavating them.

136. Large pane of yellow glass, representing a portion of drapery smear-shaded. On the outside is a good deal of superficial creeping and spotty decay opposite to the smear shadows of the inside; but the remains of the light thin smear shadows opposite to each shadow on the outside are quite distinct on careful examination, though much injured by decay.

137. A head, fourteenth century. Lines of deep creeping granular decay, suggesting the outlines of a face—hair, nose, mouth, beard, etc. but on closer examination found not in any way to coincide with the lines on the opposite side.

138. Quarry, fifteenth century. Superficial creeping decay unable to invade parts stained yellow. (Formerly in the possession of the Very Reverend John Merewether, D.D., Dean of Hereford.)

139. Another quarry, same date. The same appearance (Fig. 9).

140. On a white diapered back ground a shield stained yellow, bearing a

raven sable; fifteenth century. Superficial decay has attacked the white background and the bird, but, though coming close up to the edge of the yellow stain in several places, has nowhere invaded it.

141. Section of nacreous shell of *Haliotis splendens*, showing lamination, and by reflected light, under a magnifying power of eighty diameters, iridescent hues of the most gorgeous description, caused by the cropping out of laminæ more or less obliquely to the plane of the surface.

142. A pearl, showing by reflected light, under a like magnifying power, similar appearances.

143. A clam shell which has been exposed for five or six years upon a rock-work. The outer surface is eaten away in innumerable holes of all sizes, precisely resembling those in a pane of glass affected by pitting decay. Some are so deep as to have reached the bottom of the prismatic portion of the shell, and so near as to communicate with one another, while elsewhere in places the surface is scarcely at all affected.

144. Transverse section of outer portion of shell of *pinna*, showing hexagonal prisms in section, like a section of honey-comb or pavement of hexagonal bricks.

145. Shells, showing parallel layers dissected out by decay, the sharp edges standing out free, and still resisting the action of the atmosphere.

146. A pane of fourteenth-century white glass, a portion of which has been treated with fluoric acid. It has become white and perfectly opaque, from the formation of insoluble fluoride of calcium and of magnesium, thus showing at a glance the large proportion of these substances in the glass. (No such appearance is produced by treating modern window-glass with fluoric acid.)

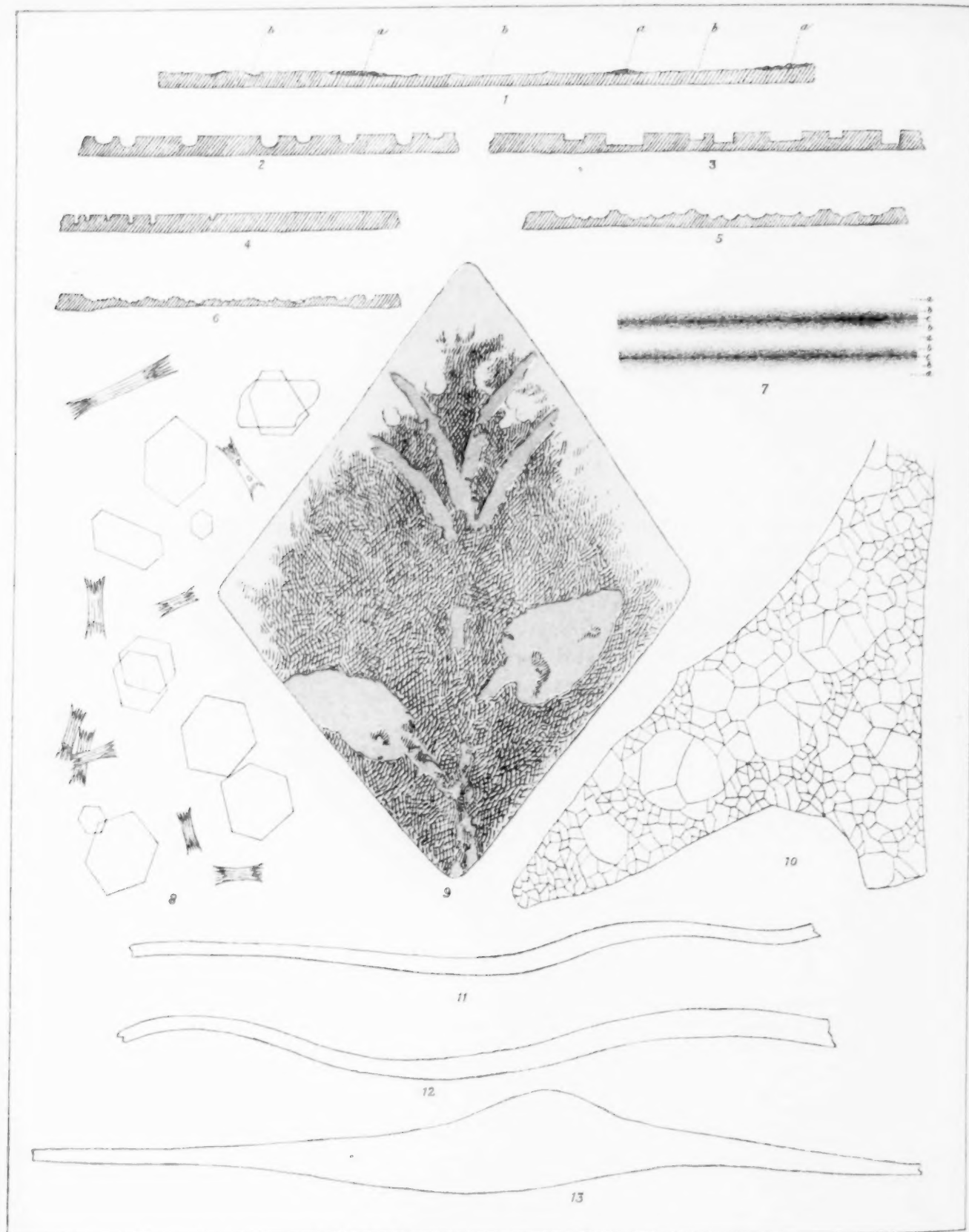
147. A pane of fourteenth-century white glass, a portion of which has been treated with fluoric acid, and the products of decomposition washed off. The surface, magnified, shows a structure about one-fourth confusedly blistery and three-fourths granular.

148. Thin section of moss-agate, showing dark-coloured dendritic ramifications in its substance. (Compare with Ex. 67.)

149. Thin section of mica, showing similar appearances. Dark ramifications in its substance resembling fragments of seaweed. (Compare with Ex. 67.)

150. Bright pellucid films, slightly iridescent, from a modern glass-house; produced by the bursting of bubbles thrown off in process of blowing bottles.

151. Thin section of felstone from the valley of S. John, Cumberland; showing a semi-vitreous structure, and by polarized light, both with and without selenite plate, splendid effects of colour indicating want of homogeneity.



FORMS OF DECAY IN GLASS.

Published by the Society of Antiquaries of London, 1879.

W. GRIGGS, PHOTO-LITH. LONDON, & C.

152. Thin section of felspar from Labrador; showing similar appearances.

153. Thin section of volcanic glass, or obsidian—so called after Obsidius, who first brought it to Rome from Æthiopia (Pliny, *Nat. Hist.* xxxvi. 26), for making mirrors. In structure it is entirely vitreous, but contains, embedded within its texture, a number of extremely minute acicular crystals.

154. Thin section of lava, from Vesuvius; showing crystals embedded in vitreous matrix, and gorgeous effects of colour by polarized light.

155. Thin section of slag, from a blast-furnace at Middlesborough. Appearances closely resembling Ex. 154.

156. A light-green glass bottle, "5½ inches in height," "tapering gradually as a horn does, from its flattened base, where its diameter is $\frac{5}{8}$ inch, to the point where a short neck begins," "at which point its diameter does not exceed one inch" (*Proc. Soc. Ant.* 2^d S. iv. 284, 285, and see engraving, *id.* v. 115); one of three, found in an old herbalist's shop at Wakefield, in 1874.

157. The bottom of a precisely similar bottle, found in my own garden at Wakefield, about the same time. It is slightly affected by iridescent decay.

158. A pane of richly diapered ruby glass, fourteenth century; outside. Surface splashed with contemporary thin mortar, roughly imitating the effect of decay. The lime and silica of the mortar have united chemically in the course of centuries so as to produce an intensely hard silicate of lime, and the lime of the mortar and silica of the glass so as to be incorporate where they join, and inseparable except by destroying the surface of the glass beneath. (See Winston, *Memoirs illustrative of the Art of Glass Painting*, p. 45.)

DESCRIPTION OF THE FIGURES.

Plate II.*

Fig 1. Section of a pane, fourteenth century, showing (*a, a, a*) crusts of the second form of granular decay, still adherent, and (*b, b, b*) uneven surface left by the exfoliation of crusts (Ex. 38).

Fig. 2. Section of a pane, fourteenth century, showing excavated spots of the third form of granular decay, leaving cup-shaped cavities of various depths (Ex. 48).

Fig. 3. Section of a pane, thirteenth century, showing wide, shallow pits, with straight sides and flat bottoms, of various depths (Ex. 49).

Fig. 4. Section of a pane, fourteenth century, showing small deep pits, like worm-holes (Ex. 50).

Fig. 5. Section of a pane, thirteenth century, showing confluent spots, excavated; the surface left ragged and uneven (Ex. 53).

Fig. 6. Section of a pane, fourteenth century, showing the inside surface extensively destroyed by the second, and the outside by the excavation of confluent spots of the third, form of granular decay (Ex. 57).

Fig. 7. A stria, in a pane of fourteenth-century ruby glass, much magnified; *a, a*, apparently homogeneous matrix; *b, b, b, b*, darker portions, on each side of each edge; *c, c*, darkest portions, forming edges of stria; *d*, bright luminous core. There are thus nine well-marked portions of different density in each stria (Ex. 110; and compare with Fig. 18).

Fig. 8. Crystals, dispersed in the texture of a pane of glass, fifteenth century. The prisms, terminating in tufts, or brushes, are probably silicate of lime; and the six-sided plates, silicate of alumina (Ex. 126).

Fig. 9. A quarry, fifteenth century, showing the first form of granular decay unable to invade parts stained yellow, except at points where either it has been imperfectly applied or the decay has spread beneath it (Ex. 139).

Fig. 10. A film from a piece of Roman glass affected with blistering decay, magnified forty-five diameters. Blisters are seen crowding one on another so as to present irregularly polygonal sections, and show lines of corrugation (Ex. 7).

Fig. 11. Section of a pane, fourteenth century, having a double bend in its lower half (Ex. 105).

Fig. 12. Section of a pane, fifteenth century, doubly bent (Ex. 106).

Fig. 13. Section of a pane, varying in thickness from one-sixteenth to three-fourths of an inch (Ex. 107).

Plate III.

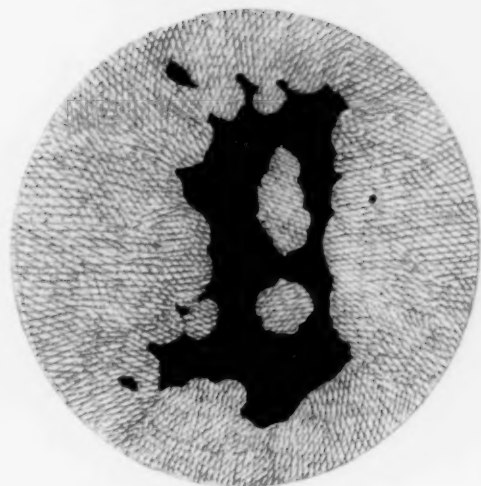
Fig. 14. Part of the surface of a pane of flashed ruby, fifteenth century, magnified thirty diameters. The flashing has been almost entirely destroyed by the excavation of confluent spots of the third form of granular decay, leaving little islands of colour here and there (Ex. 54).

Fig. 15. Part of the surface of a pane of buried glass, fourteenth century, magnified ninety diameters. Minute black nuclei are seen forming the centres of stars of three, four, five, or more points, with a black offshoot from the nucleus running down the centre of each (Ex. 60).

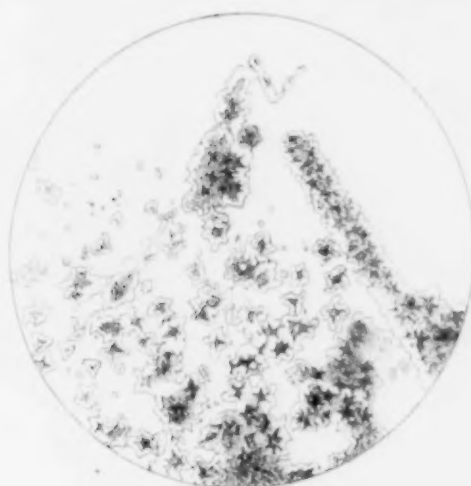
Fig. 16. Another form of the same kind of decay, from part of a pane, fifteenth century, magnified thirty diameters. The spots are surrounded by concentric rings with dark matter between them (Ex. 65).

Fig. 17. Section through about one-third the thickness of a pane of the same glass, magnified thirty diameters. Dark dendritic prolongations are seen descending from the surface into the thickness of the glass, and ramifying in its substance (Ex. 67).

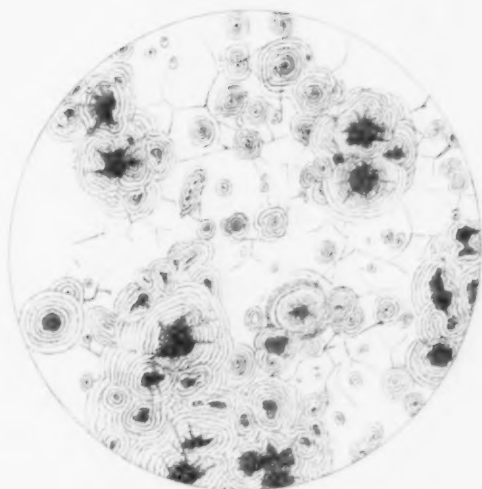
Fig. 18. Section of a pane of ruby glass, fourteenth century, magnified thirty diameters. In the original may be counted one hundred and forty-three layers in character different from that of the rest of the pane in which they occur—fifty-five coloured, and eighty-eight uncoloured. It is probable that each of these layers again consists of at least nine portions of different texture and density (Fig. 7). If this be so, the entire thickness of the pane must contain at least twelve hundred and eighty-seven layers (Ex. 110).



14



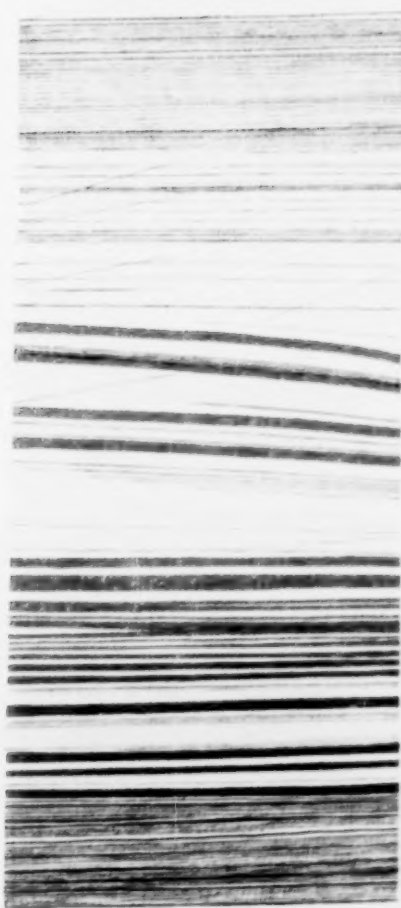
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FORMS OF DECAY IN GLASS.

Published by the Society of Antiquaries of London, 1879.

W. GIBSON, PHOTO-LITH. LONDON: S. R.



IV.—*The Excavations at South Shields, Durham.* By the Reverend JOHN
COLLINGWOOD BRUCE, LL.D., F.S.A.

Read June 29th, 1876.

It has long been known that the Romans had a camp at South Shields. The entrance into the Tyne was strongly protected by them. On the north bank of the river was a fort where Tynemouth Priory now stands, and another at Blake Chesters, about two miles to the west of Tynemouth. On the south bank were the camps of South Shields and Jarrow.

In the second edition of my account of the Roman Wall I have thus condensed the information respecting the South Shields camp which I was able to glean from Horsley, Hodgson, and others, as well as to acquire by personal observation on the spot:—

“SHIELDS LAWE.—The southern shore of the estuary of the Tyne was as well protected as the northern. A camp containing many acres stood upon the slightly-elevated headland at South Shields called the Lawe. The ground on which it stands has the sea cliff for its eastern boundary and the shore of the river for its northern. At some little distance inland, and at a lower level, it is protected by a stream called the Milldam, which joins the Tyne, and was of more importance formerly than at present. The memory is still preserved of occasions when the tide has risen so high as to insulate the promontory; and the distinction of the inhabitants into ‘over-dammers’ and ‘under-dammers,’ as they lived on one side or other of the stream, is not entirely worn out. The excellence of the situation as a post of observation is proved by the acts of the pilots, who have planted a beacon and erected many of their residences upon it. Few traces of Roman magnificence are now visible, but the bold south-west rampart of the station may easily be detected by proceeding up Salmon’s ballast railway, which cuts through it. In 1798 the foundations of many old walls, which obstructed the plough, were removed. The lowest course of some of them consisted of rough whinstone, evidently brought from the shore, as the barnacles were still adhering to them. Several coins were also found, and as some of them were of the reign of Valentinian (A.D. 380) it may be presumed that the station

was in use only a short time before the desertion of Britain by the Romans. An altar, despoiled of its inscription, which was found in this station, is preserved in the library at Durham. [Besides this an exceedingly fine altar, No. 537 of the *Lapidarium Septentrionale*, and dedicated to Jupiter for the safety of one of the Antonine family, probably Caracalla, was discovered at this station sometime prior to 1682. When Horsley wrote the altar was missing. Hodgson at a later period was unaware of its existence. Happily it was rediscovered by Professor Hübner, during his visit to this country, in the Ashmolean Museum, at Oxford.] The place was of some importance in mediæval times. The Tynemouth monks in Leland's days gave honour to the Lawe as being the birthplace of their sainted Oswin. They told also how a city called *Caer Urfe* once flourished there.

"After its destruction by the Danes, who were for sometime proudly quartered on the opposite crag, the station was called the Burgh or the Burrough Meadow."

So far as the memory of the present generation extends the Roman station and contiguous parts have always been in tillage. The richness of the soil invited this application. A year or two ago a change passed over the scene. The powers of the Dean and Chapter of Durham (so far as these lands were concerned) having previously been transferred to the Ecclesiastical Commissioners, the site was sold by them for building purposes. The inhabitants of South Shields are a spirited people, and though deeply interested in shipping and commerce they are keenly alive to the interests of literature and the history of the past. They resolved that before the Lawe was built upon they would excavate the station and evoke from its ruins any information that was concealed there. A committee was formed and a subscription raised.

I have now to state the result of these inquiries.

When we consider for how long a period the plough had passed over the Lawe it will surprise no one to be told that the buildings of the station were found to be in a very ruinous condition indeed; and when we further bear in mind that when a Roman building was struck upon in days of yore the stones of which it was composed would find a ready use in the construction of some building in the modern town we will naturally expect to find the camp had been a good deal knocked about and destroyed.

It is satisfactory to know that the ramparts of the station have been clearly traced. The wall is a little more than 5 feet thick, and in some places stands five or six courses high; for the most part, however, only the foundations could be traced. The angles of the station are as usual rounded off. The dimensions of the station are nearly 360 feet from east to west and 615 feet from north to

PLAN OF
THE ROMAN REMAINS AT THE "LAWN" SOUTH SHIELDS.

Scale of Feet.

0 10 20 30 40 50 60 70 80 90 100 200 300 Feet



C.F. Gillish London

south, inside measurement. This gives us an area of more than six acres, a size greater than that of most stations on the Wall.

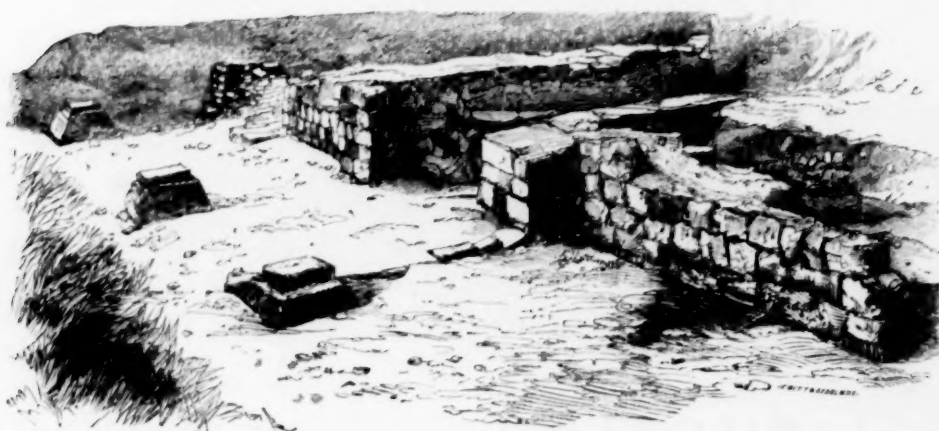
Four gateways have been discovered, one in the centre of the northern and another in the centre of the southern rampart; one in the eastern and another in the western rampart, placed not in the centre of these ramparts respectively but nearer to the northern than the southern rampart in the proportion of one-third to two-thirds of the whole length of the ramparts. Under these circumstances we should have expected a second gateway in each of these lateral ramparts, but none has been found. Near the northern gateway and proceeding in the direction of it are two water-channels for conveying the refuse water out of the camp. These are shown on the plan. (See Plate IV.) The eastern gate is more complete than the others; its guard chambers are tolerably well preserved, and in one of them remain some of the *pilæ* on which a hanging floor rested. The walls of these chambers had been covered with stucco, which has been coloured. Near the gateway was found one of those arched slabs which are often found near gateways, and which were placed over the entrances into the guard chambers. Water-channels led out of this gate. The southern and western gateways are not in an encouraging state of preservation.

With reference to the interior of the station a few general observations must suffice. The quantity of soil that covers it is very great, so that the work of excavation is carried on with difficulty. The masonry of the different buildings is remarkably good. The stones are large, well dressed, and well laid. The stone chiefly made use of is freestone, but in several parts of the camp magnesian limestone, a stone found in the immediate district, has been largely used. This limestone is close-grained and remarkably durable. In some of the principal buildings the tooling of the stones is that which in the North of England is called "diamond broaching." I do not know whether I am right, but I have most frequently found the diamond broaching in camps which have been repaired by Severus when he was preparing for his Caledonian expedition, hence I am inclined to ascribe the buildings in which it occurs to his time.

As no verbal description would convey any intelligible idea of the greater part of the plundered and battered buildings which have been brought to light I will confine myself to a notice of one or two of them.

In the centre of the camp and right in the line of the street, stretching between the northern and southern gateway, is an inclosure which has been taken for the forum. It may have been so, but its portico must have been of very narrow dimensions; there are, however, in the inside of it, the gutter stones, the same as

at Cilurnum, for carrying off the water from the roof. To the north of the forum, leaving an intervening space for the concourse of merchants or suitors, we come to a building sunk beneath the level of the soil, which is supposed to have been the *Ærarium*. If there have been *curiæ* on each side of it they have long ago been removed; the only trace of them that is left is the red concrete of their flooring. The *Ærarium*, if such it be, has been a very strong building; its walls are four feet thick, and the stones of which they are composed have been strongly clamped together by iron. Five steps descending into it still exist. It has been furnished with a window, a portion of its stone framework having been found. In the bottom of the chamber is a sunk recess, into which we may conceive the chest containing the treasure was usually deposited.



ROMAN BUILDING, SOUTH SHIELDS.

Near the western rampart are the remains of a large oblong building which the main street running between the eastern and western gateways passes on the north. It seems to have had a portico on its south front as the bases of three columns yet remain *in situ*. The woodcut shows its south front.

All the old writers speak of Roman roads which connected this camp with the stations to the east and the south of it. All traces of these have, by means of modern cultivation, been for the most part removed. In the course of the recent excavations, however, something like a paved way was laid bare, which seems to make for the western gate of the station and to proceed beyond it, probably with the view of reaching the shore.

When the excavations were commenced the hope was strongly entertained that some inscription would be found that would give us the Roman name of the

station. On this point great diversity of opinion has prevailed. Horsley considered that it was the Ostia Vedræ of Ptolemy. Hodgson took it to be the Tunnocelum of the Notitia, where the *Cohors I. Ælia classica* was in garrison.

Of the eighteen stations of the Notitia described as being *per lineam Valli* twelve have been ascertained with absolute certainty. If the station of South Shields be a Notitia station and its Roman name could be ascertained the probability is that we should thus be furnished with a clue which would enable us to identify all the other unrecognized stations of the Notitia. Unhappily no inscription of any importance has been found during the recent excavations. The only approach towards the designation of the troops in garrison here occurs on some fragments of tiles which have on them the letters COH.V.G. This may have been intended for the "fifth cohort of Gauls." It is rather provoking that whilst the common word "cohort" is represented by three letters the nationality of the cohort should be represented by only one. Even if we are right in supposing that G represents *Gallorum* we learn nothing from it. The fifth cohort of the Gauls does not occur in the Notitia at a station *per lineam Valli*. The only other trace that we have of the fifth cohort of Gauls in Britain is upon an altar found at Upper Cramond, in Scotland, which is now in the Edinburgh



ROMAN TOMB, SOUTH SHIELDS.

Museum. As yet therefore we are in ignorance of the name of this important fort. G may stand for *Germanorum*, but we nowhere meet with a fifth cohort of Germans.

In digging for sand to be used in the construction of the houses now being built upon the Lawe the burying-ground of the station has been discovered. It lies to the south-west of the camp. About seven or eight graves have been noticed. In one of them a nearly-perfect skeleton was found. It was contained in a cist formed of rough pieces of sandstone disposed in the manner shown in the woodcut. At York several tombs of a similar character have been found, made of tiles, but more carefully constructed than this. Some urns have also been found in the burying-ground containing burnt bones. Burial after cremation and by inhumation seems to have been practised contemporaneously. Within the station itself—at the bottom of the chamber which we have supposed to be the *Ærarium*—several skulls and other human bones have been found. These have probably been the result of some deadly encounter at the time, probably when the station was evacuated by the Romans.

Several examples of *graphiti* have been found but none of special interest. Scratched upon fragments of Samian ware we have REMVLI LINDITI and NEPI[A] (?), and on the fragment of an amphora BEL SIM.

Many coins have been discovered, but most of them it is supposed have found their way into the hands of private collectors. The public collection exhibits coins extending from Trajan to Gratian.



END OF SWORD SCABBARD, SOUTH SHIELDS.

Of the other objects found in the camp the most interesting perhaps are some swords. Four or five have been found at the south-east angle of the station. They are from 2 to 3 feet long and are about $2\frac{1}{4}$ to $2\frac{1}{2}$ inches broad. They have been inclosed in a scabbard of wood (traces of which remain), tipped with a bronze chape. (See woodcut.)

Other iron objects have been found: a hoe, an axe, spear-heads, and a sheath, such as was affixed by the Saxons to the bottom of their wooden spades.

A bronze armlet has been found, a bronze lamp of fine form, several fibulae and other ornamental objects, four or five of which are enamelled; one of these, a buckle, is represented in the accompanying woodcut.



ROMAN ENAMELLED BUCKLE, SOUTH SHIELDS.

It will be seen that it consists of a moulded central bar, the ends of which are formed of animals' heads, and with a projection of blue enamel in the middle; on each side are flat plates with rosettes formed of white dots on a dark blue ground; the two extremities are in the form of the Amazonian *pelta*, enamelled of a sulphur colour, with dark brown dots and a blue spot in the centre; the intermediate spaces between the angles, and the two circular projections at the extreme ends, are enamelled dark blue. Three of these buckles were found exactly alike, excepting that one has a projection for a hinge at one end; the framework of a fourth was likewise found, slightly differing in details. It has been conjectured that these may have been the ornaments of a military belt.

The central ornaments and a fragment of the framework of a similar buckle have been found with Roman remains from Brough in Westmoreland, and are preserved in the British Museum. Some fine examples from Cologne were formerly in the collection of M. Garthe, of that city, now dispersed.

There is the usual quantity of needles, pins, and bodkins, and fragments of needles, combs in bone. Spindle-whorls are abundant, several of them being of lead, together with counters, for use probably in some game. A large bead formed of light green glass has been found; it is ornamented with white and red streaks in herring-bone fashion.

A quantity of coal has been noticed in the station; it usually lies deep down, so that it cannot have been placed there after the departure of the Romans.

Fragments of glass vessels, Samian ware, mortaria, amphoræ, and cooking vessels, are abundant. Tiles, millstones, and whet-stones occur.

There are portions of circular columns which have probably adorned some public building.

A fir-cone ornament of stone with a stem attached to it has been found. No one who sees it can for a moment doubt what the fir-cone is intended to symbolize.

As usual the station was strewn with the bones of deer, oxen, and other animals. One ox-head I observed had been split up the middle (apparently sawn); this is the only time I have noticed the use of a tool upon the bones of animals used for food. The points of deer's horns sawn off from the main branch and sharpened at the end are quite common.

As usual the remains of shell-fish are abundant. We have oysters, which at present, at least, are not to be found on this part of the coast, together with whelks, mussels, and limpets, which could be got close at hand.

Such is a slight sketch of the results of the recent excavations at South Shields. If the spirited explorers have not met with all success which they desired they have done everything to deserve it.

There is yet hope that some grave-stone may be found which will reveal to us the name of the troops which garrisoned the camp on Shields Lawe, and did battle with the enemies of Rome, whether they approached by sea or by land.

V.—*Notice of a Monument at Pallanza, North Italy, dedicated to the Matronæ; with an attempt to investigate the Origin and Nature of the Cult of the Matronæ, as distinct from that of the Deæ Matres. By WILLIAM MICHAEL WYLIE, Esq., M.A., F.S.A., in a Letter to Charles Roach Smith, Esq., F.S.A.*

Read May 18, 1876.

MY DEAR SIR,

You have made the study of the *Deæ Matres* and the *Matronæ* so peculiarly your own, by the notices, in *Collectanea Antiqua* and *Roman London*, of the many memorials of these lesser Roman divinities which exist in Britain, Germany, and France, that, in venturing on the same subject, I feel almost like a trespasser. Yet we are all bound to contribute our respective gleanings to the general stock of information. Moreover, the Cisalpine examples of the cult of the *Matronæ*, which I now propose to consider, though perfectly analogous to those of other countries—the subjects of your studies—yet have their respective points of difference. These, though difficult to explain, should not pass unnoticed, and your labours have lightened my task.

On a point of land that extends itself into the fair waters of the Lago Maggiore, in Upper Italy, lies the thriving little town of Pallanza and its dependencies. As at Bellagio, on the neighbouring Lake of Como, the high land of the Pallanza promontory, where the church of San Remigio is said to hide the site of a temple of Venus, commands an outlook over the expanse of waters far as the eye may reach in all directions. Little open to attack, favoured with a prolific soil and a climate mild even in winter, it is just the spot which a band of ancient adventurers would have selected for a settlement; accordingly, we find Pallanza laying claim to an early origin. Whether the legend be true or not that the place derives its name from a former temple of Pallas Athena, this much at least is certain, that the Romans were in early possession here, and have left many memorials of their occupation. To one of these memorials I would now call the attention of the Society.

This monument is traditionally said to have been discovered at Pallanza, so far back as 1601, beneath a heap of ruins; and this is the only record we have, or are likely ever to obtain. It is a plain quadrangular *cippus* of white marble, sculptured in bas-relief on all four sides. The dimensions are about 3 feet 3 inches in height, by 2 feet 2 inches in breadth, and 16 inches in thickness. The front and more important sculpture represents a sacrifice. Above this is a dedicatory inscription of four lines to the *Matronæ*, which it may be well to give at once, before entering into details.

MATRONIS SACRVM
PRO SALVTE C'ÆSARIS
AVGVSTI GERMANICI
NARCISSVS C'ÆSARIS.

The monument is placed at present in a very insecure wall which connects the campanile of the church of S. Stefano at Pallanza with the main building. It is not more than six feet from the ground, in a situation easy for injury, and its preservation thus far must be attributed to the seclusion of the spot.

It is indeed much to be regretted that no clue appears to exist to any detailed record of the original discovery in 1601. It is therefore impossible to ascertain whether the ruins, under which the marble is traditionally said to have been found, were those of a Roman *sacellum*, or more probably of a villa.

The first mention of the inscription I can meet with is in Gruter,^a who gives it on the authority of a correspondent of his, a certain Cantonius. (*Pallantiæ ad Verbanum lacum in D. Stephani*. Cantonius Grutero.) Cantonius omits the very important letter c. before CÆSARIS in the second line. This error was perpetuated by Galleratus,^b and again by Amoretti, at the close of the last century, and his subsequent editor, Dr. Labus.^c The rubbing before us therefore enables us to give the true reading—probably for the first time. Dr. Mommsen will also give it in the forthcoming volume of his *Inscriptiones Galliæ Cisalpinæ*.^d

This omission must have been the result of mere carelessness, as the front face

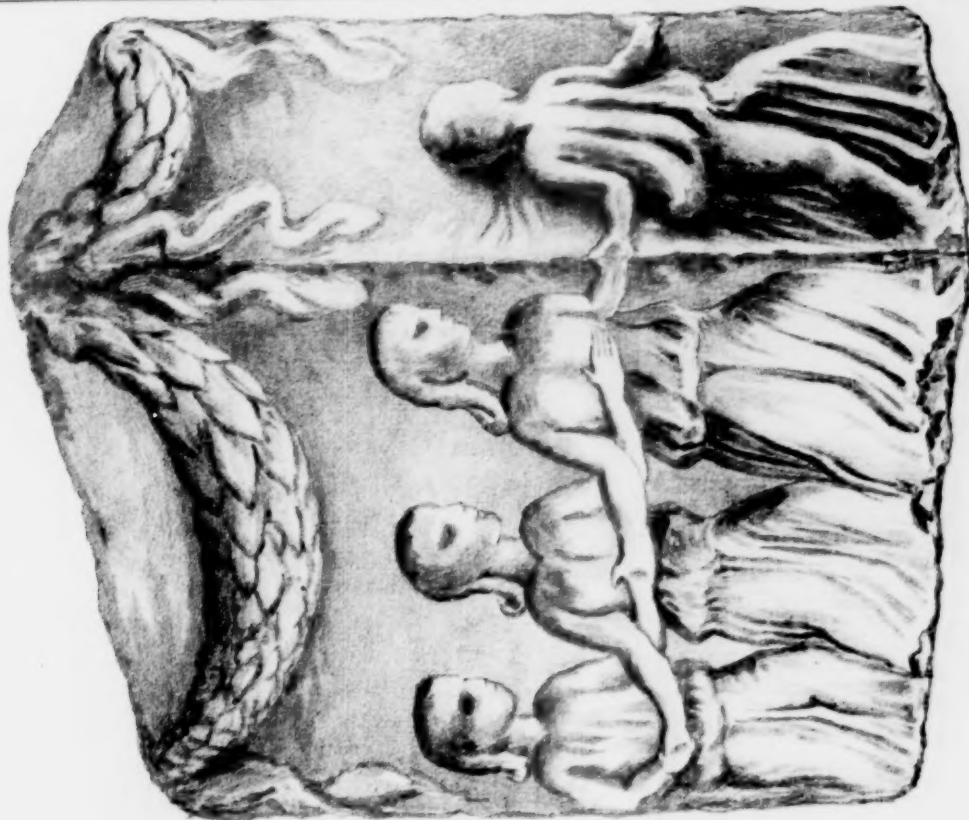
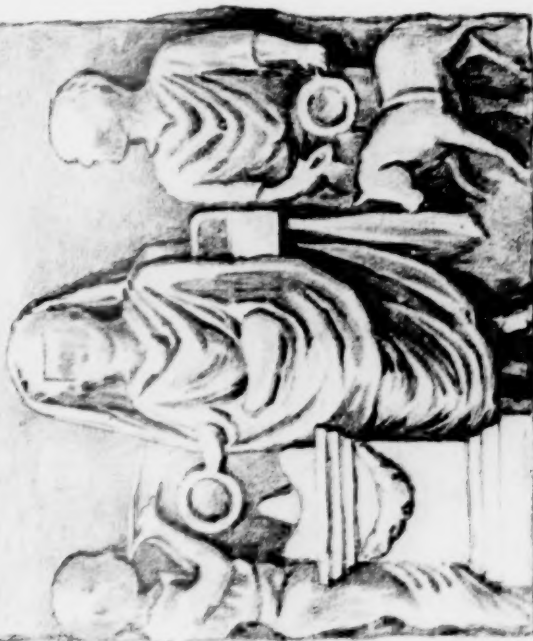
^a Corpus Inscriptionum. Tom. iii. p. 1,074.

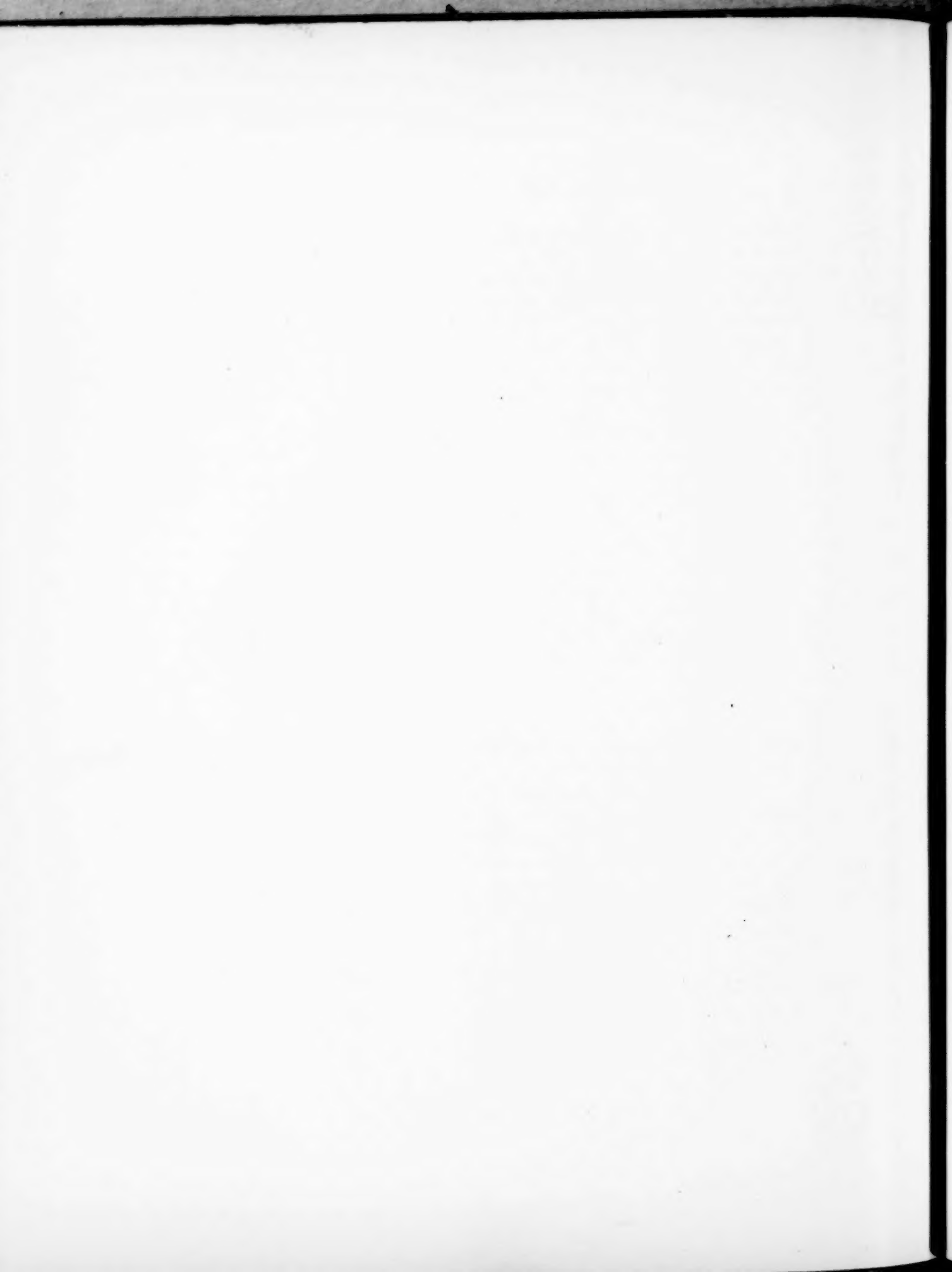
^b Antiqua Novariensium Monumenta. Novara, 1612. Inscr. xlv.

^c Carlo Amoretti. "Viaggio da Milano ai tre Laghi," p. 59. 6^{ta} Edizione corretta e corredata dal Dottore Gio. Labus. Milano. 1824.

^d Since this was written Dr. Hübner has published the inscription in the *Archäologische Zeitung*. Jahrgang xxxiv. 1876. p. 66.

MATRONI SSACRVM
PRO SALVTE GCAESARIS
AVCVSTICERMANICI
NARCISSVSGCAESARIS





of the monument, representing the sacrifice, always stood in an outside and full light. The *cippus* was originally placed in the wall of the Chiesa di S. Stefano in Pallanza. The front could then be distinctly seen on the outside of the building, and the back, with the three female figures, from within. Amoretti indeed complains that the three dancing figures were sadly obscured by the main altar. He terms them the graces, though he might have known better. As he makes no mention of the other dancing figures, we may infer these were completely mortared-up at that period, and concealed within the wall, so that their very existence had become forgotten. Amoretti well remarks on the then position of the monument, "*Questo cippo starebbe pur bene isolato.*"

His advice must have been partly followed at some subsequent period, when the heathen monument was removed from the wall of the actual church to its present resting-place, with the obvious purpose of showing all the sculpture so far as possible. It is not built into the wall in the usual manner, but stands rather askew in an aperture so prepared in the wall, like a window, that the front, back, and one of the sides are fairly visible, the other side being only imperfectly so. This has necessitated the oblique view given in our engraving. (Plate V.)

Some of the guide books mention cursorily a bas-relief on the wall of the church of S. Stefano; others, of a more inventive genius, suggest the female figures to be the wives or sisters of the emperor dancing for joy at his recovery. The monument in its entirety remains inedited.

For a primary knowledge of this interesting example of Romano-Keltic art I am indebted to the Rev. W. Owen, B.A.,^a British chaplain at Pallanza, as also for a rubbing of the inscription taken by himself, which has proved very valuable. Mr. Owen has also, at my request, caused the drawings, from which our illustrations are taken, to be executed by a local artist, under his own superintendence. We have the monument, therefore, before us exactly in its present condition, free from any attempt at restoration, with all details accurately rendered. The inscription, as will be seen, is in a perfect state. The sculpture has considerably suffered; but neither the inscription nor sculpture give a favourable idea of the state of the arts in Gallia Cisalpina at the period.^b

^a Sketches of Lago Maggiore and Pallanza, by the Rev. W. Owen, B.A. A brochure, published by G. J. Passmore. London. 1875. 2nd edition. Bickers. London. 1879.

^b Subsequently, in the autumn of 1876, I had an opportunity of visiting Pallanza, and seeing the monument.

We will now proceed to details. The inscription already given is a dedication of the stone to the *Matronæ* divinities by a certain Narcissus, in token of thankfulness for the restored health of his imperial master Caius Cæsar (Caligula).

Beneath the inscription is a bas-relief portraying a sacrifice. In the foreground is an altar. By it stands the officiating priest in his toga, a fold of which appears thrown round his head. In his right hand is a *patella*, from which he is pouring a libation on the altar; in his left there appears to be a *cistella*, or small incense-box. Nearly opposite to the priest is the *tibicen*, or, more correctly, perhaps, *tibicina*, if we may judge from the feminine appearance of the figure, playing on the double *tibia*, as the rite required.^a In the background is a male attendant with the victim, holding the *præfericulum* in his right hand, and in his left not a *speculum*, as some have fancied, but a ladle, or *patella* with a handle. Similar sacrificial implements often occur on Roman altars, and we have a peculiarly good example on the Rodingen *Matronenstein*, now in the Granducal Museum at Mannheim.^b On one side, or end, of this a youth is sculptured holding in his hands a ladle, and *præfericulum*; on the other is a female figure fully draped. The remaining three sides of the stone bear at their top the usual floral festoons. Beneath these, in bas-relief, are five female figures—the *Matronæ*, as I take them to be. Three of these figures are sculptured on the side opposite to the sacrifice, and one on each of the remaining sides. The figures are fully draped, —“longam indutæ vestem,”—graceful, and appear to be “treading a measure.” Their arms are interlaced, and their hands clasped interchangeably.^c

^a Livy. ix. 30. Ovid. Fast. vi. 657.

^b See paper on this monument by Herr F. Haug in the *Archäologische Zeitung*. Jahrgang xxxiv. 1876, p. 61.

^c Dr. Mommsen, in the second volume (No. 6641) of his “*Inscriptiones Galliæ Cisalpinæ*,” published since this paper was read, gives the Pallanza inscription, and, in lieu of an illustration, thus describes the monument:—

vir tibiis	vir capite velato	fig. stans. d.
canens.	sacrificans, d.	nescio quid,
	ex patella libans	sin. speculum
	ara. in ara, s. cistel-	quod videtur
	lam tenens.	tenens.
<i>In latere</i>	<i>In postica.</i>	<i>In latere.</i>
corona.	corona.	corona.
similis mulier	tres mulieres	similis mulier
proximam manu	manibus	proximam
apprehendens.	junctis	manu non appre-
	saltantes.	hendens.

All this corresponds exactly with the details of the Avigliano monument, also from North Italy, which, it will be remembered, was discovered in 1869, and communicated to us by our learned colleague, the Rev. Padre Garrucci. It was engraved from a very indifferent sketch made on the spot, and appeared the same year in our Proceedings (Second Series, iv. 289). The woodcut is here repeated.



Altar dedicated to the *Matronæ* at Avigliano, Upper Italy.

The only variation in the treatment of the subject in the Avigliano stone is that the *Matronæ* are there represented together in a row. It would be unsafe to generalise from two examples only, or we might be inclined to suspect some mysterious symbolism—such as the ancients attributed to the Graces—in this interlacing movement, and that the sculptors of Gallia Cisalpina were wont to convey the idea in this conventional fashion.

Be this as it may, I feel assured the learned Fellows present will already have anticipated me, and that these female figures, sweeping in festal dance,

“ Ut festis matrona moveri jussa diebus,”^a

^a Horace, De Arte Poet. 232.

will have recalled to their memories those charming lines of the poet—

“ Quam nec ferre pedem dedecuit choris,
Nec certare joco, nec dare brachia
Ludentem nitidis virginibus.”^a

This sculptured marble sets before us some such dance as the Roman poet refers to. If it shall be thought generally, as I myself think, that this interlacing movement of the dance be the very “dare brachia” of Horace, our Pallanza monument will at least have the merit of rendering a solution of what has always been a difficulty with his commentators.

The Pallanza marble is probably as well developed an example of the cult as



Upper part of altar, dedicated to the Matronæ,
by M. Marius Marcellus, Cologne Museum.^c

we are ever likely to obtain, but most unfortunately it conveys no further information which may guide us in our attempts to ascertain the origin of the cult. Some of us have thought this *Matronæ* worship might have taken its rise in the awful veneration for the Aurinias and Veledas—the Alruna dames of the Teuton forests—which really did exist in popular belief, whether Germanic or Roman,^b and found its way even into Scandinavia. Such an idea, indeed, finds utterance in the triad monuments at Lyons, Cologne,^c London, and other places, (see woodcuts) where the *three Matronæ* appear seated on their thrones with baskets of

fruits and flowers on their laps, symbolic of their supposed power over the productions of the earth. Thus far they undoubtedly coincide pretty much with the *Deæ Matres*, and both sets of divinities would be aptly classed among those

“ Dique Deæque omnes, studium quibus arva tueri.”^d

^a Horace, *Carm.* II. xii. 17. “Dare brachia.” A note in the Orelli edition, Turici, 1850, gives “Hæc maxime demonstrant matronam Romanam hic significari, quibus solis ducere licebat sacros Dianæ choros, una cum virginibus ingenuis.” Compare also Livy, xxvii. 38.

^b Proceedings. Second Series. Vol. iv. p. 293.

^c C. R. Smith's Roman London, p. 36. Idem. *Collectanea Antiqua*. Vol. i. p. 136.

^d Virgil, *Georgics*, i. 21.

^e This and the following woodcut have been kindly lent by Mr. C. Roach Smith.

But in these examples of North Italy we find the reverential idea completely changed—perhaps with the differing genius of a different people. The austere triads no longer appear. In their stead we have these quintettes of female forms moving in festal dance, possibly expressive of a more joyous personification of the powers of nature. Our learned colleague, Dr. Keller, whose suggestions are always of weight, is inclined to associate *Matronæ* worship with that of the lesser Keltic female deities.^a It may, indeed, be even so, and that the same old superstition, though swept away out of sight on the advent of Christianity, still continued to linger on in popular fancy under the form of the *fées* of France, and the fays or fairies of our own islands.^b



Fragment of group of the *Matronæ* found in Hart Street, Crutched Friars, London.

Shakespeare beautifully embodies the essence of *Matres*, *Matronæ*, *Nymphæ*, *Sulevæ*, and their many congeners, in Prospero's incantation :—

^a Anzeiger für Schweizerische Alterthumskunde. Vol. ii. p. 337. Pl. xxxi. Zürich.

^b Mr. C. R. Smith advances a similar opinion in his *Roman London*, p. 40, *note*, though more in application to the *Deæ Matres*. Also Keller in the *Anzeiger*, *loc. cit.*; and Mr. T. Wright in the "Celt, Roman, and Saxon," p. 283. Jacob Grimm too in his *Deutsche Mythologie*, 3rd. ed. p. 388. "Das weben der nornen und die spindel der feen weist uns auf häusliche, mütterliche gottheiten. . . . Bei den Celten namentlich mögen die fatæ in den begriff der *Matres* und *Matronæ* auslaufen."

"Ye elves of hills, brooks, standing lakes, and groves,
And ye that on the sands with printless foot
Do chase the ebbing Neptune, and do fly him
When he comes back."

Dr. Keller's idea is certainly supported by the fact that the Galli Boii were long in possession of Upper Italy, where they would not have failed to introduce their own superstitions. Moreover Gaul in its totality, after Cæsar's final conquest, as also Britain, came to entertain far closer relations with Rome than ever did Germany.

I fear it is hopeless to attempt a direct deduction of the *Matronæ* from any classical source. With the festival of the *Matronalia* they certainly have nothing to do. Yet, as we see their cult to have been an established fact, we may endeavour to ascertain what supernatural powers they were held to possess, which entitled them to divine honours among the various Romanised peoples. I am not aware of the existence of their memorials in Rome, or even anywhere in Italy proper.

Some have thought that while the *genii* and *nymphæ* had charge in particular of *loci* and *aquæ*, the *Matres* and *Matronæ* were the guardians of the *vici* and *pagi*. Muratori^a considers the *Matronæ* to be "*Deæ quædam provinciarum, urbiumque tutelares*," and the same as the *Junones*. But who were these *Junones* who also are so frequently commemorated in inscriptions? Spon gives an inscription from a collection at Verona:—

IVNONIBVS

AVG.

L. LICINIVS HYMNVS

VIVIR

V. S. L. M.^b

and adds "*Junones erant Deæ unicuique mulieri præsidentes, sicut viris Genii; ita muliebres Genios non male nominaremus.*" In support of this opinion Spon further cites Pliny "*Major cælitum populus quam hominum intelligi potest, cum*

^a Thes. inser. tom. i. 93.

^b Spon, *Miscellanea Eruditæ Antiquitatis*. Sect. 3, xxv. The AVG. in the second line is simply a title of veneration, which Ovid explains,

"*Sancta vocant Augusta patres; Augusta vocantur
Temp'la sacerdotum rite dicata manu.*"—Fast. i. 609.

singuli quoque ex semetipsis totidem Deos faciant, Junones Geniosque adoptando sibi."^a He also cites Seneca, Epist. 110, "Memineris Majores nostros, quia crediderunt hoc, Stoicos fuisse: singulis enim et Genium et Junonem dederunt."^b

In actual proof of this doctrine we may refer to the "Inscriptiones Gallie Cisalpinæ," No. 7593.

G . L . N̄
IVN . CLIVANAE . N̄
IVN . ANNAEAE . N̄
VI//ELLIA
RESTITVTA

which Mommsen renders as

G(enio) L(ucii) N(ostri)
IVN(oni) CLIVANAE N(ostræ)
IVN(oni) ANNAEAE N(ostræ)
VI[T]ELLIA
RESTITVTA.

Nos. 6,950 and 7,237 of the same work are all good examples of the cult of *Genii* for the male, and of *Matronæ* for the female sex. In fact, nothing can be more clearly shown than this point of Roman belief, which must have been derived from Etruscan, or possibly still more distant Oriental sources. Who can doubt this that has ever studied the mythology of the Etruscans as depicted in their tombs, where the artist has sought to raise the mysterious veil, and introduce the spirit-world to mortal eyes. "In the Turanian spirit-world," says Mr. Taylor,^c "a prominent place is taken by the guardian spirits who were

^a Plin. ii. c. 7.

Thus too, Menander, (frag. xviii.)

Ἄπαντι δαίμων ἀνδρὶ συμπαρίσταται
Εὐθὺς γενομένου, μυσταγωγὸς τοῦ βίου
Ἄγαθός.

^b The absurd multiplication of the *genius loci* is ridiculed by Prudentius,

"Quamquam cur genium Romæ mihi fingitis unum?
Cum portis, domibus, thermis, stabulis soleatis
Adsignare suos genios; perque omnia membra,
Urbis perque locos, geniorum millia multa
Fingere, ne propria vacet angulus ullus ab umbra."—Contra Symmach. ii. 445.

^c Etruscan Researches. London. 1874.

believed to be the constant protectors of the persons to whom they were attached. This doctrine also takes its place in the Etruscan mythology, and from thence it penetrated into the Roman system. Every human being was believed to have his protecting spirit, whose sex corresponded to the sex of the protected person. Every man had his *Genius*, and every woman had her *Juno*."

Now we gather from all this that these plural *Junones* were, in popular belief, attendant spirits or *genii* attached to each individual. Having advanced thus far it only remains to connect them with the *Matronæ* in order to understand the worship these ladies subsequently received.

The following inscription, found near Milan, and preserved by Muratori (i. 93), would show that *Matronæ* and *Junones* were but convertible terms :—

MATRONIS
IVNONIBVS
VALERIVS
BARONIS . F
V . S . L . M

Again, in Mommsen's Gall. Cis. Inscriptiones, No. 5249 :—

In latere.		In latere.
IVN	IVNONIB	IVN
C . V . M	MATRON.	C . V . M
	EX . VISV	
	C . VIR . MAX	

This evidence may suffice for our present purpose ; but there is yet another inscription it may be well to cite as connecting the *Matronæ* with the *Genii*. It is at Ossuccio, a village near the Lago di Como, the name of which remains but little altered. It begins—

MATRONIS . ET . GENIIS
AVSVCIATIVM . CONSECRAVIT
ARVIVS . &c.^a

By this somewhat roundabout process we seem to arrive at the possible origin of these obscure *Matronæ*.

^a Amoretti. Viaggio ai tre Laghi, p. 287.

The idea of a spirit, or *δαίμων*, attending on each individual, is simple and æsthetic enough, and perhaps even finds support in Holy Writ,^a but its character became altogether changed when combined with the superstitions of other nations. Whether the *Junones* doctrine appeared to the Kelts and Germans to harmonise with the cult of their female divinities, or whether they thought fit to associate it with the reverential regard both nations entertained for the counsels of the female sex, believing that “*inesse quin etiam sanctum aliquid et providum*,” certain it is that beyond the actual confines of the Italian States the doctrine became wonderfully changed and developed. We find the *Junones* merged altogether in the *Matronæ*, in accordance, possibly, with the idiosyncrasy of the people. No longer attendant on the individual, or restricted to the protection of the female sex, they are invoked for good or deprecated for evil, first probably for villages, and then, with a stronger and growing faith, more generally for towns, and cities. Little as we can learn of their supposed properties or powers, or of their rites, it is evident they had many worshippers in the Roman armies. These soldiers, wherever stationed, have raised monuments in their honour, and thus made the existence of the cult known over the world.

Still, with all this respect, it would scarcely seem that the *Matronæ* ranked as high-class divinities. We find dedicatory inscriptions to the “*Matres*” and “*Deæ Matres*” indiscriminately, but I do not call to mind any inscription in which the term *Deæ* is given to the *Matronæ*. The nearest approach is in one from Novara, given by Muratori (Thes. i. 94):—

MATRONIS
ET . DIS . DEABVS
T . MATVSIVS . // /// N
V . S . L . M

and these in the *Inscriptiones Gall. Cis.*:—

No. 5584. SANCTIS . MATRONIS, &c.

No. 7228. DIVIS . MATRONIS, &c.

Such plain dedicatory inscriptions as the preceding are sufficiently frequent in many localities, but not such sculptured monuments as this of Pallanza. We owe it to the wealth and policy—perhaps, indeed, to the unfeigned solicitude—of the imperial courtier Narcissus. Why he chose this remote region for its erection

^a St. Matthew, xviii. 10.

we cannot know. It may be that the altered cult found no favour at Rome, since we find no record of it there. It may be that Narcissus, though of Greek extraction, actually was a native of this region, or at least of Gallia Cisalpina. It may be that the imperial villa was adjacent, or that he inhabited his own villa on the Lacus Verbanus at this beautiful spot, as the two Plinys did theirs on the neighbouring Lacus Larius, near Como, and the poet Catullus on the peninsula of Sirmio, on the Lacus Benacus.

But, it will be asked, who was this Narcissus? The inscription tells us he was "of Cæsar's household," and we may fairly infer, from this monument of his, that he was an imperial favourite, and of high office. Beyond this we fail to trace him. But a Narcissus also appears at the Roman Court in the following reign of Claudius, and frequent mention of him, as a freedman of Claudius, appears in the pages of Dion,^a Juvenal, Suetonius, and Tacitus, but always for evil. He was, in truth, the prime mover in all the scandals in that unhappy Court. Dr. Labus, the editor of Amoretti's *Viaggio*, supposes this man to be the same with the dedicator of the monument, and to have passed into the service of Claudius on the death of Caligula. That this was so is very likely, but there is no authority to support it. But, although the name Narcissus was by no means uncommon, it is little probable that it was borne successively by two favourites of two successive Emperors. The assumption of Dr. Labus is therefore very possibly correct.^b

The vow to the *Matronæ* may have been fulfilled on the occasion of the recovery of Caligula from serious illness soon after his accession. He was then a favourite, and, in the general sorrow of the people for his illness, some of his friends, as we learn from Suetonius,^c distinguished their loyalty by offering to expose their lives on the Arena, while others offered to die outright, that is, they vowed their lives to the infernal deities in exchange for the Emperor's. Caligula, however, proved a stickler in such matters, and compelled them to fulfil these vows.^d

Before taking leave of our subject a few words may be permitted on the inveterate error which still exists of assuming the *Deæ Matres* and the *Matronæ* to be but synonymous and interchangeable terms. It is necessary to point this out, for the cults of the *Deæ Matres* and the *Matronæ*, though very analogous, were in truth perfectly distinct. The former cult is a very ancient one, and, I think,

^a Μίστρον τῶν τότε ἀνθρώπων ἐννηθεῖς. κ. τ. λ. Dion. Cass. ix. 34.

^b Professor Hübner considers Narcissus to have been the imperial *villicus* here, which is probable enough. *Archäologische Zeitung*, Jahrgang xxxiv. 1876.

^c Lib. iv. 14.

^d Suetonius, iv. 27.

derivable from classical sources—certainly Grecian, probably Oriental. I am not aware that a direct mention of the *Matronæ* occurs in any classical writer, though, if my deductions be admitted, they may represent a metamorphosis of the *Junones*. The chief difference between them seems to have been the belief that the *Matres* were a higher and more powerful class of divinities—perchance more difficult to be propitiated.^a

Thus, while we see the *Matronæ* invoked for the protection and welfare of individuals, villages, and towns,^b the *Deæ Matres*, besides all this, appear in inscriptions as the ladies patronesses, not only of certain nations,^c but even of all nations.^d

The mistake, no doubt, has arisen from the circumstance of the sculptured representations of both classes of divinities, where they usually appear as triads. It is curious how the human mind is always attracted by the fatal number three.^e The female triads of the Syrens, the Graces, the Fates, and even the Furies have all in turn been put forward as the originals of the cult. Indeed Professor Rupert Jones once wrote a very good paper in support of his conviction that the *Deæ Matres* were none other than our old friends the classic Eumenides.^f Our Italian five-figured examples tend to dispose of the mysticism of the triads.^g But though the mistake may have been in some sense venial it cannot but be

^a In the *Inscriptiones Gall. Cis. No. 6,594*, is a dedication—

MATRONIS
INDVLGENTIBVS.

^b The dolphins sculptured on the Rödigen *Matronenstein*, already referred to, may be symbolical of a belief in their power over the sea as well as land.

^c
MATRIB
ITALIS GER
MANIS
GAL * BRIT.

From an altar from Winchester, now in the British Museum. *Collectanea Antiqua*, vol. iv. pl. 14. Corp. Inscr. Rom. vii. p. 16. No. 5. See also the same work. No. 238.

^d
MATRIBVS
OMNIVM
GENTIVM.

From Cumberland. *Coll. Ant.* vol. iv. p. 42. Corp. Inscr. Rom. vii. p. 155. No. 887.

^e Ausonius, *De Tern. Num. Idyl.* xi.

^f *British Arch. Association Journ.* vol. ii. p. 315.

^g A rude sculpture on a rock found at Troinex, near Geneva, represents four female figures. It bears the name of "Pierre aux Dames." *Anzeiger für Schweizerische Alterthumskunde*, vol. ii. p. 336. It would be of interest to know if any of the small bowl-shaped hollows which obtain for the rocks that bear

termed a very careless one. There are sculptured triads of the *Nymphæ* and *Sulevæ*, and it would have been quite as reasonable to have urged that these triads all meant one and the same thing, and might with accuracy be also termed *Matres*, or *Matronæ*—anything to the contrary in the inscriptions notwithstanding. If a difficulty exists it is not to be got rid of by assumptions tantamount to a declaration that the ancients neither knew their own purpose, nor one thing from another.

Sculptured stones, representing single female figures on horseback, are occasionally met with, and have been attributed to the *Matronæ* class—*reitenden Matronen*. In the absence of inscriptions we may more safely assume these to represent *Nehalennia*, or *Hippona*, both of whom were also favourite Romano-Keltic divinities, and always appear thus singly.^a

The triad examples of *Matronensteine* in Rhineland by no means affect uniformity in detail, as will at once be seen on comparison.^b

The more certain mode of proving the diversity of these cults will be to adduce sure evidence where the two will appear in juxta-position.

In 1824, among the ruins of a temple near Thun, in Switzerland, there were found six small votive bronze axes. On each of these was incised the name of a different divinity, as thus :—

IOVI	MERCVRIO
MINERVÆ	NEPTVNO
MATRIBUS	MATRONIS ^c

Here we have proof of a distinct offering to both classes of these divinities, which never could have occurred had they been looked on as identical.

them the name of *pierres à écuellés* or *schalensteine* had ever existed on this stone at Troinex. Such rocks are common in Switzerland, and especially so in Sweden, where they bear the name of *elfstenar*, or the stones of elves or fairies. M. Hans Hildebrand informs us that "la population actuelle de la Suède a encore aujourd'hui beaucoup de vénération pour ces pierres, dans les écuellés des quelles les campagnards déposent de petites offrandes, par exemple, des aiguilles, des boutons, &c." *Congrès International d'Anthropologie et d'Archéologie Préhistoriques*. vii. Session. Stockholm. 1874. *Compte Rendu*, p. 487.

On this curious subject also refer to Keller's "*Schalensteine der Schweiz*," being the second part of his *Helvetische Denkmäler* in vol. xvii. of the *Mittheilungen der Antiquarischen Gesellschaft in Zürich*. 1874.

^a Lindenschmit's *Alterthümer*. 2 Band. Heft 1. Tafel 6: also 3 Band. Heft 10. Tafel 3.

^b Compare the monuments from Rödigen, Embken, Wettweis, and others: also the Suabian example from Zazenhausen, near Cannstadt.

^c *Mittheilungen of the Zürich Society*, vol. x. 1854, under "*Inscriptiones Confederationis Helveticæ Latine*," edited by Dr. Mommsen.

But the very important Lyons inscription^a cited by Spon, and copied by him from the stone, appears to dispose of the question, and I will give it at full :—

PRO SALVTE DOM
N. IMP. L. SEPT. SEVERI
AVG. TOTIVSQVE DOMVS
EIVS AVFANIS MA
TRONIS ET MATRIBVS
PANNONIORVM ET
DELMATARVM
TI. CL. POMPEIANVS
TRIB. MIL. LEG. I. MIN.
LOCO EXCVLTO CVM
DISCVBITIONE ET TABVLA
V. S.

This inscription is so precise in all its terms that it leaves no room to doubt that the military tribune Pompeianus, in thus discharging his vows to the *Matronæ* of Ofen^b and the *Matres* of the Pannonians and Dalmatians, was under the full impression that the two classes of divinities were distinct and independent.

This *Matronæ* cult is a subject of peculiar interest. We can heartily reciprocate the wish of Professor Hübner, that a collection of the known examples of these memorials were made by some learned body, and published with abundant illustrations.^c If the editorship of such a work were committed to Dr. Hübner himself, there is little doubt that much light would be thrown on this obscure subject.

^a Spon, *Miscellanea Eruditæ Antiquitatis*, p. 106. *Discubitis* is an unusual word, referring to the Roman custom of reclining on a couch at dinner. This term, and the mention of the *tabula*, show this monument was inaugurated by a solemn formal feast. The inscription is at Fontaines, canton de Neuville-sur-Saône; see Comarmond, *Musée Lapidaire de Lyon*, p. 427.

^b The Aufanian *Matronæ* seem to have been in repute. Spon, p. 107, gives another inscription in their honour :—

MATRONIS
AVFANIABVS
T. ALBINVS
IANVARIVS
S. L. M.

Ex Antiquit. Neomag.

^c *Archäologische Zeitung*, p. 66, Jahrgang xxxiv. 1876.

The advent of Christianity would gradually suppress the public cult of the various female divinities of heathendom, but it could not suppress private, and strange, results. Who can say when a deeply-rooted superstition may come to an end?

The legendary poems of the middle ages contain amusing notices of the *Matres*, *Matronæ*, or their congeners. This might well have passed for poetic fancy, but that bishops of the eleventh, twelfth, and thirteenth centuries complain of the superstition their people would persist in of setting apart a portion of the evening meal as a propitiatory offering to certain supernatural females, who, as they believed, visited their houses at night!

Can a wild reminiscence of this kind in the early writers have furnished our Shakespear with the grand idea of the "weird sisters" in *Macbeth*?

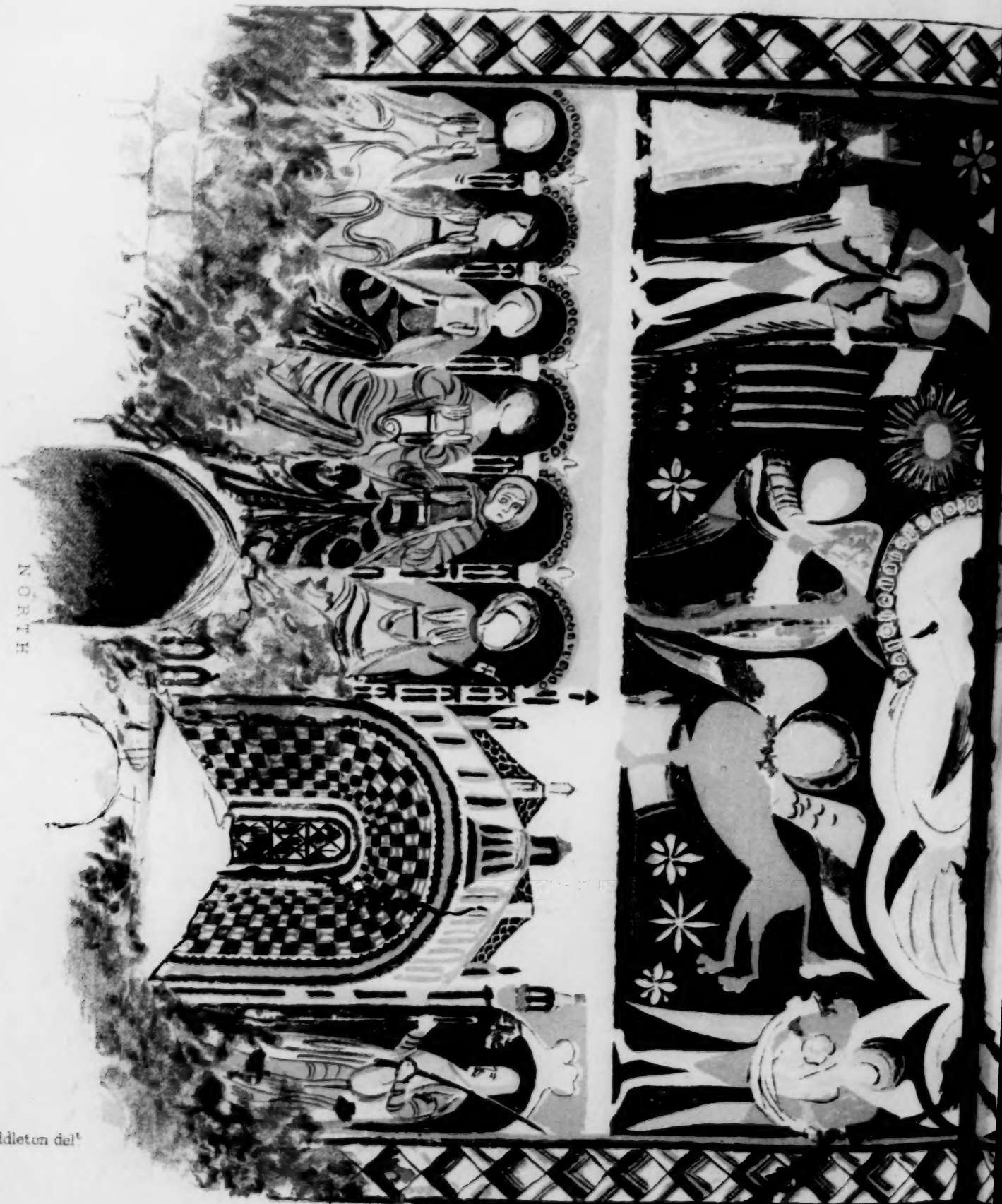
Those who care to follow up the subject will find very much condensed information in the *Deutsche Mythologie* of the learned Jacob Grimm, one time an honorary Fellow of our Society.

Believe me always,

Most truly yours,

W. M. WYLIE.

Blackwater, 5th May, 1876.



NORTH

Henry Middleton del.

about 8 ft. to Floor

Inches

CEILING & NORTH & SOUTH SIDES (IN PLAN)

SOUTH



C. F. Kell, Lith. London.

about 8 ft. to floor

(IN PLANO) OF CHANCEL: KEMPLEY CHURCH.



VI.—*A Description of the Paintings in the Church of Kempley, near Ross.* By
JOHN THOMAS MICKLETHWAITE, Esq., F.S.A.

Read January 18, 1877.

KEMPLEY is about seven miles from Ross. It is in Gloucestershire, but on the borders of the county of Hereford, and was formerly in the diocese of Hereford, though now in that of Gloucester and Bristol. The church, which is dedicated to the Blessed Virgin, is of the usual type of small parish churches of the Norman period, being made up of aisleless nave and chancel, the former about 34 feet by 19 feet, the latter about 18 feet by 14 feet, inside the walls. All the original walls remain, though most of the windows have been replaced by later ones, and a tower of the fifteenth century has been added at the west end. The chancel is roofed with a plain barrel-vault of rubble.

The paintings, which now give the church its chief interest, were covered with whitewash till 1871, when they were discovered by J. Henry Middleton, Esq. F.S.A. who carefully removed the whitewash and made the copies of the pictures, which he has placed at the service of our Society, and from which the illustrations of this paper are taken. (See Plate VI.) No attempt at *restoration* has been made, either in the pictures themselves or in the copies.

The most important paintings are in the chancel, where the whole surface of walls and vault has been covered with them, and the greater part remains in a state of very fair preservation, although a settlement in the vault has caused an ugly crack all through the principal picture. All the painting here appears to be of the early part of the twelfth century, contemporary with the building, or nearly so, and it is, I believe, by far the most perfect scheme of coloured decoration which remains to us of so early a date in England. The apse at Copford may have originally been somewhat similar, but there was much less of it, and repainting has now completed its archaeological destruction. Both at Kempley and at Copford there was a unity of design not often found in old English wall-paintings. These generally represent a succession of subjects which, though they may have an iconological connection, and several are often run

together so as in a manner to make one picture, are really so many separate centres of interest, each one of about equal value with the others.

The subject here is our Lord seated in majesty and surrounded by the heavenly court, and the treatment is very closely what Durandus described as usual more than a century later:—

Picta (imago Salvatoris) ut residens in throno seu in solio excelso praesentem indicat Majestatem et Potestatem. . . . Et quoniam, sicut ait Lucas, tunc videbunt filium hominis venientem in nube cum potestate magna et majestate, ideo ei quandoque circumeirca pinguntur Angeli, qui ei semper serviunt et adsistunt, et depinguntur cum sex alis secundum Esa: *Seraphin stabant juxta illud: Sex alae uni et sex alae alteri, et duabus velabant faciem ejus duabus pedes et duabus volabant.* Depinguntur etiam Angeli tanquam in aetate juvenili florentes, nunquam enim senescunt. Quandoque etiam circumpingitur Archangelus Michael draconem suppeditans. . . . Quandoque etiam circumpinguntur xxiiij seniores, secundum visionem Joannis, in vestibus albis et coronis aureis. . . . Si lampades adduntur dona Spiritus Sancti repraesentantur. Si mare vitreum, baptismus innuitur. Quandoque etiam circumpinguntur quatuor animalia secundum visionem Ezechielis et ejusdem Johannis. . . . Hi sunt quatuor evangelistae, unde pinguntur cum libris in pedibus. . . . Matthaeus figuram sortitur humanam, Marcus figuram tenet leonis. Hi ponuntur a dextris. . . . Lucas vero vitulus est. . . . Joannes autem figuratur aquila. . . . Quandoque etiam circumpinguntur vel potius subpinguntur Apostoli, qui fuerunt testes ejus verbo et opere ad ultimum terrae. Et pinguntur eriniti quasi Nazarei.^a

So far Durandus. Let us now examine the “majesty” at Kempley. In the middle of the chancel ceiling is a figure of our Lord, considerably over life-size, seated on a curved red object, no doubt intended for a rainbow, and inclosed in a frame or glory of the usual three-lobed shape. A cruciform nimbus surrounds the head, and resting on the left knee is a tablet or open book, with the Greek names *ΙΗC ΧΡΣ*:. Unfortunately the right side of the figure is too imperfect for us to see the position of the hand, but it would almost certainly be raised in benediction. The feet are to the east, and below them, just outside the frame, the border of which is continued round it, is a large circle much damaged by the settlement. I take this to represent the earth thus made the footstool of our Lord, but perhaps it is intended to represent the sea of glass, which Durandus mentions, whilst he does not mention the earth. Right and left of this circle are six-winged nimbed seraphs each bearing a scroll, and on either side of the principal figure stand the evangelistic beasts, which are in the order given them by Durandus. The ox, the eagle, and the lion hold open books. The other figure, which is issuing from a cloud, now shows no book, but part of it is indistinct,

^a *Rat. Div. Off.* lib. i. cap. iii.

and there may have been a book originally. All four are nimbed, and the lion and eagle appear to have human faces, as may be occasionally seen in other representations.

Next, westwards, above the head of our Lord, are the sun and moon, the sun to the north and the moon to the south. The sun appears as a face surrounded by white rays, and the moon as a blue crescent inclosing a head. At the sides of these great lights are the seven candlesticks, four on the north and three on the south. They are not shown as of gold but are blue with white knops, and the form of the feet suggests that the originals from which they were copied were of iron. Each has a tall tapering candle. Next are two more seraphs, each holding a book in his western hand and in his eastern a lance with a square pennon. There is enough of eastern influence in the work to justify the suggestion that in these figures we have a reminiscence of the *δορυφερούμενον* of the Greek liturgy to which our Fellow, Mr. Edwin Freshfield, directs attention in *Archæologia*, vol. xlv. p. 386.

Beyond these seraphs and close to the chancel-arch are, on the south side, St. Peter nimbed, with key in right hand and book in left, and on the north a female figure also holding a book. She is without nimbus, but her head is muffled in a head-cloth or wimple, over which is a crown. I have little doubt that this is intended to represent Our Lady, the crown taking the place of the nimbus, as it often does in the Benedictional of St. Æthelwold,^a the painting of which, though about a century and a half earlier, has much in common with that which we are examining, and may be said to belong to the same school. In the Benedictional are many figures with the nimbus and many with the crown, but the two are never used together, and women always have the wimple. The crown is always a circle with three upright ornaments or leaves, and such it has, I doubt not, been at Kempley, although the detail has perished.

All the figures mentioned thus far are painted on a red ground, forming a broad band along the top of the vault. This band is bounded by a white stripe on each side, and stopped east and west by bands of an interlaced pattern, which are carried all round against the end walls. The ground within the great glory is white, and stars or flowers of white and yellow are scattered between the figures on the red ground. The hair of all the figures which show any, both here and in the rest of the work, is light, with the one exception of our Lord, who is shown with hair of the same red as forms the ground outside the glory.

The side-walls of the chancel are divided each into two unequal parts by

^a *Archæologia*, xxiv.

windows near the east end. The northern one remains unaltered. It has borders of red and yellow to the inner and outer arches, and the splay of the jambs and arch is covered with a mosaic pattern of red, blue, and white. The southern window has been altered and enlarged, but there remains above it, as there does above the opposite one, a painted canopy of walls and towers.

West of the windows are painted on each side six arch-headed niches in which are seated the twelve apostles. They are all nimbed and hold books. St. Peter, who occupies the eastern place on the north side, is distinguished by a large key, which he holds under his left arm. The others have nothing by which they can be recognised. Similarly in the Benedictional just quoted St. Peter alone of the apostles has any distinguishing badge. He has there two keys, which seem to hang from a small cross which he holds in his left hand. The elaborate quasi-heraldic system, which gives a special badge to each saint, is of later growth. It began by drawing martyrs holding the instruments of their suffering. This is mentioned by Durandus in the latter part of the thirteenth century, and badges other than these are rarely found during the fourteenth. But during the fifteenth century, and especially late in it, many were used, the explanation of which must be sought in symbolism or legend.

All the apostles direct their attention towards the figure of our Lord. Under their feet has been an ornamental band or fringe, about five feet from the floor, some of which remains, but all painting below it seems to have gone.

Eastward of the two side-windows are a pair of niches rather wider than those occupied by the apostles. In each is a figure without nimbus and having a staff in each hand, one over the shoulder, and one used as a support, like the *bourdon* of a pilgrim. Both wear long tunics with mantles fastened on the shoulder, and he on the south has a hat of the orthodox pilgrim form. These two figures, having neither nimbus nor crown, are probably not saints. I take them to represent either the donors of the pictures or some other benefactors of the church. The custom of thus introducing figures of donors was common before the date of this work, and continued throughout the middle ages.

The east end of the chancel has one window with a round head concentric with the vault, and below it is a band of the same interlacing pattern as is found on the ceiling. Over the window are three roundels containing each a nimbed angel holding a scroll in both hands, as if singing from it, and on each side of the window has been a large arched niche. There are large trefoils in the spandrels, between the roundels and the niche-heads, each having a blue and two

yellow leaves. Of the northern niche little remains, but in the other is a very perfect figure of a bishop. He is habited in mass vestments, and his right hand is raised in benediction. In his left he holds a crozier.^a The chasuble is dark-blue lined with yellow. It has a broad grey orphrey down the front, and is short in front and long behind. Chasubles are often represented thus in works of the eleventh and twelfth centuries, and I am not satisfied whether the shortness in front is due to the shape of the vestment or to some way of looping it up. It cannot always be due to the unskilfulness of the artists. The oldest chasubles which remain are conical,^b and as long in front as they are behind, as those used by the Greeks are to this day; and many passages in old writers seem to refer to this shape. And when, late in the twelfth century, the shape began to be changed for the sake of convenience, the reduction was made not in front but at the sides. On the whole, therefore, it seems probable that the shortness in the pictures comes from the way in which the vestment was worn.

Round the neck of the bishop at Kempley is a broad band coloured pale-red. I think it belongs to the chasuble and not to the amice, as it would do at a later date. The dalmatic is white and reaches to the feet, so that the alb and stole are not visible. It has a broad band of yellow round the bottom. The maniple is blue, very narrow, and with expanding ends of white, with a row of tassels on each, as on the stole of St. Thomas of Canterbury at Sens. It is worn on the wrist after the modern manner and not on the hand. The two fashions seem to have existed side by side for a long time, for the later is shown in the Benedictional of St. Æthelwold, and the earlier in the figure of Stigand on the Bayeux tapestry. The mitre of our bishop is not white as we should expect, but pale-red like the collar of the chasuble. It is of the earliest low form with the points imperfectly developed, and appears to have something more than the usual fillets hanging behind, or perhaps it is worn over a coif, such as is shown in the enamelled figure of Bishop Ulger,^c formerly in the church of St. Maurice at

^a It has been the fashion for some years to use the word *crozier* for the cross which was carried before archbishops, and which effigies sometimes show in their hands. But it belongs properly to the bishop's crook.

^b I can find no real evidence for the flat circle with the hole in the middle, which is said to have been the earliest form of the chasuble. The conical shape seems to be primitive, and it was used in both East and West till the middle of the twelfth century.

^c Ulger died in 1149. The tomb is figured by M. Viollet-le-Duc, *Dictionnaire du Mobilier*, vol. ii. p. 224.

Angers. The crozier is a simple crook like that of Bishop Flambard of Durham, lately found in his coffin there, and exhibited to our Society in 1875 by the Rev. J. T. Fowler, F.S.A. (See *Archæologia*. vol. xlv. p. 388.)

At the feet of the bishop is on his right side what looks like a small black pitcher, and is possibly intended for a cruet; and on the left is a yellow circle inclosing a blue cross, the field of the circle being the red of the ground. This looks very like a dedication cross, and the position is a likely one. There is in the collection of the Society a drawing of the figure of a bishop painted on the east wall of Barfreton church, in a position exactly corresponding to this, except that it is on the north side. The figure is of the thirteenth century, and, seemingly painted over the lower part of it, is what there can be little doubt is a dedication cross. The cross at Kempley has been compared to the two crosses at the feet of a rude figure of a bishop on a tympanum at South Ferriby church, Lincolnshire, the date of which may be not far from that of our paintings.

The colouring is continued on the east side of the chancel-arch, which is of two plain square orders. The outer order is decorated with a mosaic pattern arranged in zig-zags. The inner has ten yellow roundels bordered with red, which, in spite of their number, I think may have contained signs of the zodiac. The ground-colour of the arch is white.

There is a good deal of painting remaining in the nave, but it is neither in such good condition nor has it been so fully examined as that in the chancel. It is of various dates, and I shall now only describe that on the east wall above and about the chancel-arch, which alone appears to be of the same work as that in the chancel. The chancel-arch is inclosed in a sort of square frame filled with a mosaic pattern of red and white triangles. Above this is our Lord seated on a semicircular rainbow. The upper part is cut off by a modern ceiling, above which the painting may possibly remain. There have been figures attending on our Lord, but scarcely anything can be made out with certainty except an angel blowing a large trumpet, which is twice bent back upon itself. On each side of the chancel-arch has been painted a niche like those at the east end, and in the southern one a nimbed figure can still be traced. This and a corresponding one on the other side probably represented the saints to whom the two altars at the sides of the chancel-arch were dedicated.

It is satisfactory to know that these pictures, which for antiquity and completeness are, I believe, without rivals in England, are now well cared for. They

are not to be restored, and the walls of the chancel have been well buttressed, to prevent further spreading.

Mr. Middleton, F.S.A. contributes the following on the method used in the painting:—

“With regard to the technical process by which these paintings were executed, we may, I think, be certain that they are not true frescoes, that is, that they were not executed on freshly laid and wet stucco; first, because the colour is merely superficial, and has not sunk into and become incorporated with the stucco; and secondly, from the absence of any trace of ‘fresco edges,’ as they are called, that is, the scarcely perceptible lines that separate the patch of stucco laid one day from that of the next and succeeding days. For, as it was necessary that the colour should be laid on wet and perfectly fresh stucco, it was of course needful that only as much stucco should be applied to the wall at once as the painter could cover with one day’s work, and in very hot weather even less. Any superfluity of stucco that had got dry and set before the colour was applied had to be cut off, and a fresh patch laid on.

“It was this peculiarity in fresco-painting, requiring great *verve* and decision on the part of the painter, and the almost impossibility of altering what was done without actually cutting the piece out, that contributed so largely to its breadth and boldness of effect, and thus made it so successful a means of producing a form of decoration at once monumental in character and harmonious with its structural surroundings.

“It must not, however, be understood that a fresco could not be re-touched and much of its high finish added to it after the first dashing application of the colour, for on most of the great works of this sort of the fifteenth and sixteenth centuries it is easy to distinguish a second process, by which numbers of fine lines were hatched on to the surface of the stucco, and laid over the first broad tints. In many instances, as, for example, in Luca Signorelli’s magnificent series of frescoes in the Duomo of Orvieto, representing the coming of Anti-Christ, the Last Day, and the Resurrection, and in Michel Angelo’s paintings on the vault of the Sistine Chapel, these finishing touches in ordinary tempera play a very important part, both in modifying the masses of light and shade and in strengthening or defining the outlines of the figures.

“Unfortunately, the word ‘fresco’ is commonly used rather vaguely, and is often employed, even by the Italians themselves, to mean simply any tempera painting on stucco: they distinguish the true fresco-painting on wet plaster by calling it ‘fresco buono,’ and the other sort, on dry plaster, they call ‘fresco

secco,' which is really a self-contradictory phrase. It would be better always to use the word in its true and literal meaning of painting on wet or 'fresh' plaster.

"I think it is doubtful if the art of real fresco-painting was ever practised in England. I have carefully examined a large number of early paintings on the walls of English churches, which are far commoner than is generally supposed, but have never succeeded in discovering an example of the real fresco, or 'fresco buono.'

"The Kempley paintings, then, were executed on dry stucco, in tempera, with probably a medium of egg and vinegar, or perhaps size."



EAST END OF CHANCEL, KEMPLEY.

Scale $\frac{1}{4}$ of an inch to a foot.

VII.—*On the Churchwardens' Accounts of the Parish of Stratton, in the county of Cornwall.* By EDWARD PEACOCK, Esq., F.S.A.

Read Nov. 29th, 1877.

AN apology is needed for my presumption in reading a paper this evening on the Churchwardens' Accounts of Stratton. They certainly ought to have fallen to the lot of some Cornish man. My attention, however, was directed to them by their present owner, William Maskell, Esq. F.S.A. and I found them so interesting that I could not resist the temptation of bringing certain gleanings I have made therefrom under the notice of this Society.

Stratton is a very ancient market-town in the hundred of the same name, in Cornwall. It consists mainly of one street, lying upon the Roman way; whence the name. The western portion of the parish is bounded by the sea, lying exposed to the Atlantic. Stratton was one of the manors given by William the Conqueror to his half-brother Robert, when he made him Earl of Cornwall. Afterwards, at an early period, it belonged to an old family called in various records *De Albo Monasterio* or *Blanchminster*. Some small remains of the mediæval moated house inhabited by this race may still be traced. Later the manor was purchased by the Grenville family, from whom it passed (through Lord Carteret) to the present possessor, the Rev. Lord John Thynne.

The church is dedicated to Saint Andrew, and the tower and nave are good examples of the middle fifteenth century style, as prevalent in the north of Cornwall. There are two aisles, and indications of an altar at the east end of each. A stone effigy of a cross-legged knight—one of the *Blanchminsters*—lies under a window in the north aisle. The benefice is a vicarage in the gift of the Duchy of Cornwall; to which also now belong the great tithes.

An important battle was fought here, on the 16th May, 1643, between the royalists, under the command of Sir Ralf Hopton, and the forces of the Parliament led by the Earl of Stamford. The Cavaliers were victorious, and, as a reward for his services, their commander was created Lord Hopton of Stratton.

The volume in which these accounts are contained is an ordinary foolscap folio in limp parchment binding. It is entitled "*The counte boke of the hycrosse wardenys of Stratton.*" It begins in 1512, and ends in 1577. The first

thing that strikes us on even the most cursory examination of the record is the strange and very varied manner in which money was raised for the support of the church and its services. Nothing like a church-rate seems to have been in use; the income of the wardens came from the voluntary contributions of the people. A large portion of it arose from payments made for having names put upon the bede-roll. Sometimes they were the names of living people, at others of those recently dead: 3s. 4d. was the common fee for this. The bede-roll must have been a very long document. There is no indication when it was begun. A very large number of names were added to it between 1512 and the accession of Edward VI. It seems probable that this long list of names was not read out daily or weekly, but only on All Souls' Day and other like occasions specially set apart for offering prayers for the dead. At other times it was, I think, hung up so that such as could read might know for whom their prayers were more especially entreated.

At Stratton I gather that this list was suspended upon or near to the great crucifix. This seems to be indicated by a few entries which tell us of names not as put upon the bede-roll, but "a pone the hye crosstor." Crosstor is a word that is new to me, but I shall perhaps not be regarded as extremely rash if I provisionally interpret it to mean the great crucifix of the church.

A second source of income was the custom of selling for 3s. 4d. the right to have a grave in the church. Burial in the churchyard here, as elsewhere, seems to have been free, but the above fee was paid by the relatives of those who desired to sleep their last sleep in the immediate presence of the holy mysteries of religion. Natural as the feeling was, the evils springing from a regard for it must have been great. From the number of such payments here recorded it is evident that the church must have been almost paved with corpses. This custom of the wardens charging a fee for burial in the church was not confined to Stratton, but extended into many widely separated parts of England. I have met with similar entries in the manuscript church account books of Kirton in Lindsey, Louth, and Sutterton, in Lincolnshire. The practice prevailed also at Cartmel,^a in Lancashire, St. Martin's, Leicester,^b Cheddar,^c in Somersetshire, Eltham, in Kent,^d Minchinhampton, in Gloucestershire,^e Wing, in Buckinghamshire,^f Leverton, near Boston, in Lincolnshire,^g Hartland, in Devonshire,^h and

^a Stockdale's *Annals of Cartmel*, 48. Cf. 108, 555.

^b North's *Chronicle of Church of St. Martin, Leicester*, 82.

^c *Hist. MSS. Com.* iii. Report, 329.

^d *Archæologia* xxxiv. 64.

^e *Ibid.* xxxv. 430, 436, 444.

^f *Ibid.* xxxvi. 229, 240.

^g *Ibid.* xli. 366.

^h *Hist. MSS. Com.* v. Report, 572.

Stoke-Courcy, in Somersetshire.^a A Bill was brought into Parliament, April 5th, 1642, to prevent extortions for burials. It was read but once. Probably the press of business caused by the disturbed relations between the King and the Parliament, rather than any objection to the measure itself, caused it to be dropped after the first reading. A draft of the Bill exists among the manuscripts preserved in the House of Lords. It sets forth that "Fees to the value of two, three, four, five, and sometimes six pounds or more are charged by ministers, churchwardens, and other officers, for burying the dead, whereas no fee is due but one to the sexton for digging the grave."^b

A third constant source of income was the ringing of a knell for the dead. Fourpence was paid for this. We must not here confound, as has sometimes been done, the knell with the passing bell. The passing bell was, as its name indicates, tolled whenever any inhabitant of the parish was "in articulo mortis;" for this, I think, no payment was expected or made. It seemed to be to our forefathers a natural right belonging to every Christian. The knell, or "knyll" as it is here spelt, was a bell rung *after* death to remind people to pray for the dead, not, as in the passing bell, to make intercession for the dying. A different bell was used for each of these purposes, so that by the sound everyone could tell for what purpose his prayers were desired. Furthermore, the passing bell was rung at any time of day or night when a soul was "passing." The knells were probably rung on stated days, and at fixed times only. I have seen evidence, but cannot call to mind where, that Friday was the day on which knells were commonly rung.

Another means of revenue was the practice of letting out funeral vestments and other ornaments for hire. Several instances occur like the following: "Receivid of Thomas Heyward & Richard Lobbys for the black sute xij d." It seems probable that this "black sute" belonged to the parish, and that, when any parishioner died he had a right to have it used at his funeral mass, but that when non-parishioners required it to be used, a fee had to be paid. The entries, however, may mean not this, but that besides the common funeral suit there was another of a richer kind, which was only used for those whose relatives were willing to pay for it.

A very large part of the receipts of the churchwardens arose from the church-ales. Sometimes the sum derived therefrom rose as high as 3*l*. These church-ales have been traced by enthusiastic antiquaries to the heathen festivities of the unconverted Angles and Northmen. Speculative archæology is one of the least useful of mental processes, and there is a very long time to bridge over between the church-ale of the late mediæval time and its heathen prototype. We cannot,

^a *Hist. MSS. Com. vi. Report, 348.*

^b *Ibid. v. 16. Commons Journals, ii. 511.*

however, divest ourselves of the fancy (belief is too strong a term) that the church-ales of Christian times were really connected with the older festivities.

As to their moral character, there cannot have been very much to choose between them. For the purpose of holding these ales, there was at Stratton, as at many other places, a building called the church-house. It was not inhabited at ordinary times, but on certain occasions the wardens brewed beer, and it was sold and drunk there for the good of the church. The malt seems to have been acquired by collecting contributions from among the people. There was no Excise in those days, and almost every farmer, I believe, made his own malt. It is evident that such festivals as these, though in their own nature harmless enough, must often have led to scenes of drunkenness; strict measures were however taken, when the churchwardens did not profit by it, for preventing drinking going on in the church-house.^a In 1541 two men were fined one penny each for "drynkyng of a canne of alle" there. The object for which the church-house was built was no doubt for purposes of festivity, but it was in another way a source of profit. At fair-times it was let to merchants, and on other occasions we find Gipsies taking up their abode therein. "Received of the Egyppcions for the church house xx d." is an entry of 1522. This was before the Act of Parliament of Henry VIII. which provided, that "Forasmuch as before this time divers and many outlandish people calling themselves Egyptians, using no craft or feat of merchandize, have come into this realm, and gone from shire to shire and place to place in great company, and used great subtil and crafty means to deceive the people, bearing them in hand that they by Palmestry could tell men's and women's fortunes, and so many times by craft and subtilty have deceived the people of their money, that therefore they should forfeit their goods and be obliged to depart the realm within fifteen days."^b

Twenty-seven years later than this we find the following most singular entry: "Received of Jewes for the church house ijs. vjd." The word "Jewes" is not

^a Cf. *Archæologia*, xxv. 440, xxxvi. 239, xli. 339, 348. *Notes and Queries*, v. S. ix. 405.

^b xxii. Hen. VIII. chap. 10. Skelton the poet in *Elinour Rumming* seems to allude to the costume of the gipsy women of this period, but it is possible that the Egyptian he had in his mind was some figure in a picture or piece of tapestry representing a subject from Holy Scripture or the legends of St. George or St. Katherine. Speaking of the heroine of the poem, he says that her head was adorned

"After the Sarazins gise,
With a whim wham
Knit with a trim tram,
Upon her brayne panne
Like an Egiptian."

Cf. *Archæologia*, xviii. 227, xxvii. 38. *Hist. MSS. Com. vi. Report*, 215. *Notes and Queries*, v. S. ix. 511.

erased, but "Jeptyons" is written above it in another but contemporary hand. Are we to believe that the Stratton accountant was so ignorant as not to know that Jews were not permitted to reside in England at that time, or did these poor wanderers call themselves Jews to escape punishment under the barbarous statutes then in force? One of the theories which have been broached by foreign students to account for the origin of these wanderers is that they are descendants of German Jews who to escape persecution took to a nomadic life.^a This undoubtedly mistaken hypothesis gains some apparent support from a passage like the above. Once more, in 1560, we find "the Jepsyons" occupying the church-house for one night, and paying 4*d.* for their accommodation. These entries seem to prove that the stern Tudor laws against Gipsies, which have been, with great justice, the subject of denunciation by modern writers, were not so strictly enforced as is commonly believed. My own impression has long been that these people and other wanderers were commonly not proceeded against unless they were detected in the commission of crime, but that when they broke the law they were punished, not for the offences they had committed, but under the statutes against Gipsies and the various other cruel acts for the suppression of vagrancy.

The practice of persons, especially those of high rank, giving their clothes to be made into church vestments has been noticed more than once,^b but I do not remember observing any instances of the custom of giving cooking vessels, books, and other personal ornaments, to be sold for church uses. These accounts however furnish several examples of this. In 1526, Harry Raynols gave a book of prick-song—that is, a music book—instead of the fee or 3*s.* 4*d.* for a grave. In 1530, the vicar gave a kercher, the value of which is not set down. In 1534, Christian Elyt gave her kirtle, the value of which was 6*s.* 11*d.*, and in 1537 another lady gave a kirtle that her name might be set upon the bede-roll, the value of which was 5*s.* 6*d.*

It is the common opinion, and I believe we have high legal authority in its support, that, the churchyard being the vicar or rector's freehold, the trees growing therein are his property. A contrary custom must have prevailed at Stratton, for in 1531 the wardens received 2*s.* 8*d.* "for wode of the lopping of the treys yn the cryche erth," and again, in 1541, 1*s.* 10*d.* "for the wode of the church erthe."^c

I have not thought it needful to direct special attention to the many highly

^a Grellman, H. M. G. Dissertation on the Gipsies.

^b "I wille that the gownes of dame Anne Verney, late my wife, doo make vestiments to be given to churches, accordyng to the discrecion of myn executors." Will of Sir Raulf Verney the younger, 1525, in *Verney Papers* (Camd. Soc.) 43, 46. Matilda, Queen of William the Conqueror, gave her tunic and mantle to be made into a cope, *Archæologia*, xvii. 93.

^c Cf. Stockdale's *Annals of Cartmel*, 62.

interesting entries which mark, as it were from day to day, the progress of the Reformation. This could not be done effectively without occupying an altogether unreasonable amount of space. It is needless, as the extracts which follow contain a copy of every entry bearing on the subject. It may however not be out of place to notice that we have evidence that, after the accession of Queen Elizabeth, the holy communion was administered in the form of wafer. In 1562 we find "paid for ij c. [two hundred] of howsselen bred xij d." and in 1576 "payd for syngyng bred x d." I have accompanied the extracts from the "hye crosse wardens" book by some notes from the accounts of the churchwardens of Saint Andrew of Stratton, from 1532 to 1547. They are of a very similar nature, but contain some few passages of interest not to be found in the High Cross series. Attached to this church was a female guild called "our ladies maidens." These women contributed something to the church stock every year. There are also several memoranda of payments made to the church by Robin Hood and his men. In the year 1538 these people gave the large sum of £3 0s. 10d. A religious guild would hardly have been called after a hero of the type of Robin Hood; though popular, he by no means came up to the ideal of holiness, necessary to form a saint, even in popular estimation. We must therefore conclude that these people were a band of rustic players. The latest mention of them is in 1543, when we find Martha Rose and Margaret Martyn paying for the wood of Robin Hood's house 3s. 5d.* The change of feeling which was slowly creeping over the minds of men had evidently caused Robin Hood and his men to discontinue their sports. The MS. from which these notes are taken is a volume of the same size as the preceding, and is also the property of William Maskell, Esq., F.S.A.

The Counte boke
of
The hye Crosse wardenys of
Stratton
a° dñi
m° ccccc xij.

rec. for Symon pole to be set a pone þe hye crosstor ij s. iiij d.

rec. of John Bond & John Coke septyn men xx d.

rec. of John Getyn for his wyfe ys dafter to be put a pone þe hye crosstor ij s. iiij d.

* In 1566 a payment was made "for setting up Robin Hood's bower" at St. Helen's, in Abingdon, Berkshire, *Archæologia*, i. 16.

rec. of Walter Gyste for his wyfys pytt^a iij s. iiij d.
 rec. of Walter langforth for a knyll iiij d.
 rec. of Thomas marys for the brack sute^b xvj d.
 rec. of Thomas henward & Richard lobbys for the black sute xij d.
 rec. for the hye crosse ale^c yn our tyme xxx s. iij d.

[Paid] for expenses at the visytacon at lanceston xiiij d.
 payd to John wolfe for vij pownde of wex^d a gens ester iiij s. viij d.
 payd for makynge of the same wex to wylliam Gyste iiij d.
 payde for a yerd of bokeram to make iij new Stolys vij d.
 paid to wylliam Jule for a stape^e to the stepyll dore iij d.
 paid to mores Taylour for makynge of iij new stoles mete & drynk & hyre iiij d.
 paid for thred j d.
 paid for blessing of v awter clothys and iij new stolys^f xxiiij d.
 paid for bred & drynk to þe ryngers to rengen a gens my lord bosshopp^g ij d.
 paid for a gallon of wyne to Geve my lord bosshopp ij d.
 paid for iiij new gerdelys ij d.
 paid for the church dore kay j d.
 paid for ij truss of Rushes^h vj d.

^a Grave.

^b Brack is a penman's error for black.

^c The church-ales were maintained by collecting contributions of malt from the parishioners, with which ale was brewed. This ale was sold and the money was applied to church purposes. At Stratton and many other places a church-house existed in or adjoining the church-yard in which church-ale was held. These festivities sometimes, perhaps commonly, took place on Sunday. The sum of money received at Stratton for the ale was often considerably larger than on the present occasion. Stubbs's Constitutional History, i. 628; Ellis's Brand's Popular Antiquities, 1813, i. 229; Wallington Historical Notices, i. 54, ii. 296; Hone's Every Day Book, ii. 338. A. H. A. Hamilton's *Quarter Sessions*, from Elizabeth to Anne, 28, 99. *Notes and Queries* v. S. ix. 441. *Archæologia*, xii. 13, xxiii. 33, xxxv. 435, xxxvi. 225, 226, 227, 233.

^d Wax to be made into candles.

^e A staple.

^f "Item, sine vestibus, ab episcopo, vel altero potestatem habentem, benedictis, celebrare non licet." De Burgo, *Pupilla oculi*, Strasburg, 1516, 23a. The payment was probably not to the Bishop himself but to one of his clerks.

^g Hugh Oldham, S. T. P., had licence to be consecrated Bishop of Exeter, 29 Dec., 1504. He died 25 June, 1519. Oliver, *Lives of Bishops of Exeter*, 117. Hardy's *Læ Neve*, *Fasti Eccl. Anglic.* i. 377.

^h These rushes were no doubt purchased for strewing on the floor of the church. Entries of a similar kind are common in churchwardens' accounts, e. g. Leverton, co. Lincoln, 1506. "to gynkyng Watkingson and Walter long for mawing Red a day to met and hyre xij d." *Archæologia*, xli. 342. When Charles II. attended church at St. Helier on 23 Feb., 1649, the aisles were strewn with rushes and the building decorated with green boughs. *Hist. MSS. Com. Rep.* ii. 164. At Clee, near Grimsby, in Lincolnshire, the parish formerly possessed a "right of cutting rushes from a piece of land . . . called Bescars, for the purpose of strewing the floor of the church every Trinity Sunday." H. Edwards's *Old English Customs*, 218. The above work contains several other kindred notices. The Hall of the Trinity House at Kingston-upon-Hull is strewn with rushes at the present time.

paid to John Gyste for makyng of ij collers^a ij d. ob.
 paid for the frethyng^b of the Stepyll wyndows iiij d.
 paid for mending of ij sacring belys ob.
 paid to wylliam Gyst of pozhyll for makyng of þe church style, mete & drynk xiiij d.
 paid for makyng of a new bere and mendyng the old bere vj d.
 paid for makyng of a leeche to the church style ij d. ob.
 [paid] for scowryng of the sence^c j d.
 paid for bressyng^d of synt armyll ys chalys iiij d.
 paid to Wylliam Jule for mending of a clapper^e vj d.
 [for] makyng elene of the stypyll j d.
 paid for x yerdes of elescloth to make iiij rochetes v s. vij d.
 paid for makyng of the rochyetes xij d.
 [paid] for washeng of the church clothys vj d.
 [paid] for makyng of thys cownte iiij d.

1513.

Rec. for S. Thomas Constabell for the belles and adornamentes xij d.
 rec. of Johanna paynter for iiij namys which be set a pone the bedroll x s.
 [rec.] for a knell for Thomas mores ys Servant iiij d.
 rec. for our ale yn our tyme xxxvij s.
 rec. of Wylliam Cory for a olde coler for a bell x d.

[paid] for Expences to the visitacion at lanceston xiiij d.
 [paid] for vj pownd of wex a gense Ester iiij s.
 paid for my lady parcyvale ys meneday^f to iiij preistes & for bred & ale ij s. ij d.
 paid for mendyng of an olde serpeles iiij d.
 paid for makyng of the clock x s.
 paid to Wylliam pery to pay the priestes wages x s.
 paid for v pownd of wex a gens Crystysmas ij s. xj d.
 [paid] for frankencens ij d.

^a For the bells.^b To fret or rub, *i. e.*, to make clean.^c Censer.^d Probably a slip of the pen for "dressing," *i. e.*, cleaning.^e A bell-clapper.^f A day on which prayer was made for the repose of Lady Perceval's soul. A.S. *maenan*, to have in mind. *Myn*, to have in mind, or remember, frequently, in the earlier English, signifies to pray for, *e.g.* :—

"And Mary his modur, that mylde is of mode,

Of qwom that blissfulle barne in Bedlem was born;

He gif me grace, to grete thi saule with the gode

And *myn* the with massus, and matins, on morun."*The Anturs of Arthur, in Three Eng. Met. Romances* (Camd. Soc.) 9. In the same poem we find a person promising "a miliun of masse to make thi *mynnyng*," p. 9.

paid for making of the tapers vij d.
paid for xxx^a vethem^a of cord.

1514.

Rec. for Genkyn priest ys Gyfte xx d.
[Rec.] for the hye crosse all our tyme xxxviij s.

Paid for mendyng of the church clothys ij d.
Paid for a cord for þe sepulcher cloth j d.
[Paid] for putch, terre, and gress^b to puche þe belropys iiij d.
Paid to Robert Cuttyng for a days Jurney for trussyng of the bellys and for a man to helpe hym, for þeir mete & drynke & hyre x d.
paid for wyre to heng þe canaby^c j d.
paid for ij boschelys of lyme xij d.
paid for lathenaylys ij d. ob.
paid for lathys ij d.
paid for helyng stonys^d ij d.
paid to the helyer for his wages vj d.
paid for sodyer^e xvij d.
paid for ij semys^f of gravyll iiij d.

Recevyd for small drynk þe last brewyng xviii d.
[rec.] for draff xiiij d.
Recevyd for the browne mele ij d.

there was left to pay yn wode of the fyrst brewyng v d.
Jamys was yn wood the last brewin v d.
& I was the reste of the wood x d.
for woode to Roste all the tyme xij d.
for bakyn of bred & pyrs^g iiij d.
for vij pottyles of syder ix d.

^a Fathom.

^b Pitch, tar, and grease.

^c The canopy which was suspended over the altar, beneath which the host was hung up.

^d Flat stones used for roofing purposes, from the the A. S. *Hélan*, to cover, to conceal. "Be fore evyn it reyned so sore that they were fayne to helle the wall and leve werke." *Paston Lett.* ed. 1872, i. 216. The helyer of the next entry was the person whose trade it was to *helle* buildings.

^e Solder.

^f A seam of corn was eight bushels. Bailey, *Dict.* 1749. The word here probably means a horse-load. Cf. *Seam*, Bosworth's *Ang. Sax. Dict.* *Seme*, Blount, *Law Dict.*

^g Pears.

for hoppys^a the laste brewyng iiij d.
 for foure pesys of bacun, trenete sunday
 my wyffe ys to pay for a peek of mele by hepe & ij boxsys of floure viij d.

1515.

rec. of Johanna Jevll to putt her hosbound apound the bed roll iij s. iiij d.
 rec. for hover alle yn hover yere iij li. ix s. vij d. ob.

[paid] for mendyng of v obys^b & wassheng of the same & mendyng of the blew sute & þe
 black sute viij d.

rec. of Walter Gyste for brokyn lyd.^c
 rec. of Wylliam Call for a Dublet iij s. vj d.

payd to John Volfe for ix yerdes of bocram to make howslyng towlys^d iij s. iiij d.
 paid to the plommer for a clothe^e of led & soder & warkmanshep xxj s. ij d.
 Expenses at the visitasion of my lord boshopp xvj d.

1516.

rec. of Wylliam Olyuer for a walch^f bord iij d.
 rec. of the same Wylliam for ij yendes of ropys^g iij d.

payd to John Cholwyll for a new wheffyll^h for the gret bell and for mendyng of the other
 bellys iij s. iiij d.

paid for Sylke to mend the vestementes

paid to m^y. Vicar for the bedroll

paid for walche bord

paid for a C of helyng stone

paid for a box, to Wylliam Davy to get evydens

[paid] for ij pere of hose (*sic*) clothys . . .

[paid] for the lentⁱ cloth ij d.

^a In the *Penny Cyclopædia*, and many other popular books of reference, it is incorrectly stated, that "hops were introduced into England from Flanders about the year 1524." Earlier instances of their use than that in the text could be produced. The hop is, probably, an indigenous plant.

^b Albs.

^c Lead.

^d Towels used at holy communion.

^e Evidently a web of lead. The word in this sense is new to me.

^f Probably a board of foreign timber.

^g The "walch" board and the end of rope had probably been used for a scaffold when repairs had been wanted. The work was now done and they had become useless.

^h Wheel.

ⁱ The veil or curtain, which, in Lent, was suspended between the choir and the nave. See *Archæologia*, xli. 338.

1517.

paid for a kay to the vaulte^a ij d.
 paid to John Hacker for possyng^b of Saugwen ys howse & for makyng of the howse to set
 the church tymber yn iiij d.
 paid to John Jule for daching^c of the same house.
 paid to Stephyn smale to serve hym, mete and drynke and wages iiij d.
 paid to Alson hog for strekyng^d of the straw mete & wages iij d.
 paid to Wyll for schereng of the church hog ij d.
 paid for hye rent for the church house iij d.
 paid for mendyng of the church clothes j d. ob.
 [paid] for expenses for ther soper when they came home with þe lyne v d.
 paid for a lanterne^e vij d.
 paid for iij ferdelys^f of lyne vij d.
 paid to Thomas marys for a reward to on of the lord ys seruantes iij s. iiij d.
 [paid] to Nycolas Woglow for ij wenys^g of more stone iij s. iiij d.
 paid to the same Nycolas for a yate^h to the more iiij d.
 [paid] for expenses the same time ij d.
 paid for the fettyngⁱ of the schaft^k tymber vj d.

^a Probably the canopy over the high altar, under which the blessed sacrament was suspended.

^b I believe this means plastering. Whatever it was it must have been something very soon done, for the amount of payment for the "possyng" and making the wood shed indicates that the work did not occupy more than about a day.

^c This almost certainly means thatching, *d* having taken the place of *th*. We find a payment for preparing the straw in a following entry.

^d To streak means to stretch; but here it evidently signifies to lay the straw smoothly and evenly, ready for the use of the thatcher. In the northern dialect to streak a corpse is to lay out the limbs ready for being enfolded in the grave-clothes.

"Wi' doors ajar, and candle light,
 And torches burning clear,
 The strekit corpse, till still midnight
 They waked, but naething hear."

Young Benjie. Scott. *Border Min.* ed. 1861, iii. 15.

^e For the purpose of holding a light to be carried before the blessed sacrament when taken to the sick. Cf. *Archæologia*, xli. 353.

^f Seemingly the southern form of *Frundele*, two pecks. Here it must mean a much more copious measure.

^g Wains; in this case wain-loads.

^h Gate, a going. Here it means that the payment was made for the use of Woglow's wain and horses going to the quarry to bring home the stone.

ⁱ Fetching.

^k Perhaps foreign poles used for making scaffolds. Shaft sometimes means a Maypole.

1518.

rec. at the fayre of vj messers ^a vj d.

payd to the bucke bender ^b iij s. iiij d.

payd for mendyng of ij chalys ij s. viij d.

[paid] to the hoper for mendyng of the framys vj d.

[paid] to yengzn for mendyng of þe cloke ij s.

[paid] to morton ys wyfe for mendyng of the surpys iiij d.

payed for ix vethem^c off wyer for the cloke ix d.

[paid] for blessyng of ij chalys iiij d.

[paid] for feofers fynes of stoneland & hele iiij d.

1519.

rec. of Thomas prieste for the refusing of the wardynshep iij s. iiij d.

paid to Nycolas heddon to pay the priestes wages xiiij s. iiij d.

paid for ij new crewyttes x d.

Md. rec. of my3hill myll for to sett iij namys a pone the bedroll the valour of xxx s. j d. yn ordinamentes ^d longyng to the church.

rec. of my3hill myll for a chandelor iiij d.

rec. of John Gyst for occupying of the church hows ij d.^e

rec. of Thomas mares for occupying of the kechyn j d.

rec. of William Gyst for the best cross iiij d.

rec. for stondyngs in the church howse ij s. j d.

rec. of John Trevelan for the browse of the church heges ij d.

rec. for the hyc cross ale yn our tyme xliij s. j d.

paid to a glasyer for mending of a glas viij d.

paid for ij 3emys of 3ond ij d.

paid for schyilyng stonys ^f to Thomas mares iij d.

^a Mercers.

^b Book-binder.

^c Fathoms.

^d Ornaments.

^e Entries of this sort occur frequently. It would seem that the church-house, when not wanted for parish festivities, was from time to time let to strangers for a small sum. Standings in the church-house also are let almost yearly. These standings were probably occupied by travelling merchants at fair-times.

^f Possibly slates. Halliwell gives "*Shellet*. A sort of imperfect or rotten slate. *Devon*." The entry may, however, mean for dressing or hammering stones into a fit shape for being used.

paid for a Schowle^a x d.
paid for strow v knochys^b j d.

1520.

rec. of John Androll for stondyng in the church howse j d.

[paid] for scheryng the church hagg ij d.
[paid] for makyng of the church pekys iiij d.
[paid] for mendyng of the church howse steres j d.

1521.

[paid] for mendyng of a dext^c j d.
[paid for] paryng of the church hagge j d.^d
[paid] for scowryng of the grette chandeleres j d.

1522.

rec. of the Egypceions^e for the church house xx d.
rec. of Wylliam Dromond for poche (*sic*) for the yere a past xvij d.
rec. of the same Wylliam & John Rose for þis yere ij s.

paid to my vicar for bedroll & Wylliam Northyn ys per petual meneday^f v s.
paid for expenses for John Trenger ys meneday ij s. j d.
paid to Johanna morton for mendyng of ij surples j d.

1523.

[rec.] of Wylliam dromond for huny and wex xij d.
rec. for a messer^g for stondyng agenst the church howse ij d.

payd for expenses to my lord Besshep^h ys visitacon ij s. iiij d. ob.
paid for expenses at the last visitacon at lanceston xij d.

^a A shovel.

^b Five knots, i. e., sheaves of straw.

^c Desk.

^d The church "hagg" is often mentioned. It seems to have been a small inclosed meadow. The charge for cutting the grass is frequent. This yere it was pared, no doubt for the purpose of burning the surface. Land which has been long used as meadow produces coarse herbage, and "paring and burning" was, and still is, a common resource for producing grass of finer quality.

^e Gypsies.

^f *Vide ante*, 1513.

^g Mercer.

^h John Vesey, alias Hardman, consecrated Bishop of Exeter, Nov. 6, 1519. He resigned the see 14 Aug. 1551. Hardy's *Le Neve*, *Fasti Eccl. Anglic.* i. 377.

1525.

rec. of Nycolas heddon for broken yre ^a xvij d.
 rec. of Wylliam Dromond for poche (*sic*) & hony xij d.
 rec. of John Rose for hony & wax xix ob.

paid for lathe nayle & for a pyn of yre for a poly ij d. ob.
 payd to m^y vicar for the bederoll & for Wylliam Northen ys perpetiall obytt or mendeday ^b v s.
 payd for hye rent to the lordes of Bynamy for þe church hows iij d.
 paid to John Gyste for mendyng of þe priestes chamber ij s.

1526.

rec. of M^y Harry Raynols for a buck of prikesong for a grave ^c iij s. iiij d.
 rec. of the berehurdes ^d for to have rome yn the church howse ij d.

paid to Wylliam Gyst for ix yerdes of dowles for to make a surples iij s. iiij d.
 paid for a bhare ^e ij d.
 paid to Robert Sharke for redyng a bowt the church howse iiij d.
 paid for a pownd of wekys ^f ij d. ob.
 paid to Wylliam Olyuer for C of schelyng ^g stonys iiij d.
 paid to Nycolas vglow for xj crestes ^h xxij d.
 paid for glue for mendyng of þe organs j d.

rec. of my lady arondell for knellys for M^y Rychard Arondel & M^y Edward viij d.

[paid] for a yerd & halfe of blak reben sylke j d. ob.
 [paid] for iij quarters of crescloth ⁱ for to couer the chalys iij d.
 paid to John Kyng for the ouer plus of the crock ^k þat was gevyn xij d.

^a Iron.^b *Vide ante*, 1513.^c That is, he gave for the burial fee for a grave in the church a music book worth 3s. 4d. instead of that sum in money.^d Bearwards.^e Meaning doubtful. It cannot mean a bier, as it would have cost far more. It may, perhaps, signify bear, and be the record of a gift to the bearwards who lodged in the church for permission to see the animal. It will be observed that the receipt and the payment are the same.^f Wicks for candles.^g *Vide ante*, 1519.^h Crest tiles for the ridge of a roof.ⁱ Fine linen cloth, *Halliwell*.^k A crock, that is, some pot or cooking vessel, had been given to the church. King had bought it and had, it seems, given too much, so a shilling was returned to him. See 1527.

[paid] for expenses of the aschedekyns^a wisitacon at lanceston.
 paid for ij processionales^b ij s. iiij d.
 paid for a manuell^c ij s.
 paid for a yre^d for holywater boket iiij d.
 paid to Thomas Shayner for schutyng^e of the bellropys j d.
 paid for vj yerdes of cressclothe to make awter clothys ij s.
 paid for (*sic*) to Thomas mares for blessing^f of the same iiij.
 [paid] for hemmyng of them j d.
 paid for mending of a chalys vj d.
 Expenses of my lord besshepp his visitacon xvj d.
 paid to hew Corter for mending of þe churche clothys vj d.

1527.

rec. of S. John Grene for hony vij d.
 rec. of my lady arundell to set M. Ryehard arundell & Edward Arundell a pone the bederoll vj s. viij d.
 rec. of Nicolas Symon of Bourwode for a crock þat Robert Heket gaue to þe church for to set iiij namys a pone the bedroll x s.
 rec. of the paynters for wyrkyng yn the church howse xij d.
 paid for a pownd of fraunkensens to Thomas Nicolson iiij d.
 paid to Thomas Heket for a cofer key iiij d.
 paid to Nicolas Hedden for makyng off ij yres for cortens and for a yre for the holywater boket vj d.
 [paid] for di yerd of satyn of burges^g for þe vestementes xij d.
 [paid] for v quarters of Grene tuke.
 paid to Mystares Grenfyld for rebens of sylk for to mend the vestmentes xvij d.
 paid to the said Mystares Grenfyld for bradry^h gold vj d.

^a Richard Sampson, collated to the Archdeaconry of Cornwall 1517, resigned 1528. Hardy's *Le Neve, Fasti Eccl. Anglic.* i. 399.

^b Books containing those services in which processions were used. Maskell, *Mon. Rit.* i. cxi.

^c A book containing occasional offices such as baptism and extreme unction. *Ibid.* i. lxxvii.

^d Iron. It here means either an iron handle by which to carry the bucket, or a hook on which to suspend it when not in use.

^e Shooting, *i.e.*, twisting.

^f Mares may have been a priest who had faculties from his bishop to bless sacred vessels; it is more probable, however, that he was the person who took them to the bishop to be blessed, and had paid the 4d. now re-imbursed him.

^g A fabric which took its name from Bruges in Flanders.

^h Gold thread for embroidery.

paid to John peres for mendyng of the vestmenttes v s.
 [paid] for ij new rochettes ij s.
 [paid] to S. John Grene for washeng of the Carporas j d.
 paid to the paynter for payntyng of the lent clothys for ymages xij d.

1528.

resevyd for the goyne vij s. viij d.
 resevyd for a quaartt of honny þt cume froo John roos vij d.
 paid to Jogor Juyll for paryn of the church erd hassys^a j d.

1529.

receuyd off John marys for kepyng off the tolswytt in the church howse att crystmasse iiij d.
 made with our ale at wytt sonday clerly xl s.

payd for canuass to amend the cope iiij d.
 [payd] for mendyng off the cope ij s.
 [payd] for thred to mend roeges^b & syrpyls ij.
 paid to hew corter for mend off the same roeghyddes^b & syrpyls iiij d.
 paid for a showle for the bedman xij d.
 paid to Nycholas heddyn for a crock of yron iij d.
 for paryng off churche agge j d.
 payd to Thomas hekyth to repaire the klok ij s.
 payd for ix yerdes off Dowlys to make a syrpuys iij s. iiij d.
 [paid] for a yard off holand to make ij cotidiall cop's^c xij d.
 paid to John rose to redd^d the church howse iiij d.

1530.

Rec. off Rycherde westlake for a name apon þe bedroll iij s. iiij d.
 Rec. off the forsayd Rycherd for a knyll which payd to the byyng of þe grett bell ij d. now
 she^e gaue for her knyll besyd that ij d.

^a Paring of the churchyard hassocks. A hassock is a large and thick tuft of coarse grass.

^b Rochets.

^c Probably corporaxes for daily use. The contraction is obscure; but the word cannot have been meant for copes, as a yard of holland would have been very insufficient to make even one cope; nor was holland the material used for that vestment. In an Inventory of the goods of the guild of St. Mary of Boston taken in 1534, there occur "iij cotidian course cases with iij clothes." Peacock, *Ch. Furniture*, 206.

^d Put in order, make clean.

^e She, indicates that it was that of a woman whose name Richard Westlake had put on the bede roll.

Rec. off Garrett for occupyng of the kechyng yn þe chrych house with teseles^a iiij d.
 Rec. off the baylee off the towne for occupyng off the cryche house for ij ferrys.^b
 Rec. off master Thorne for occupyng off þe ornamentes of the cryche^c xij d.
 Rec. off the forsayd master Thorne for a knyll.
 Rec. off Wylliam Whyett for the ornamentts of the cryche xij d.

payd for makyn of a frame to sett tapers yn afore þe sepulker xij.
 payd to Nycolas Jude for making of ryngges for the lent cloth^d ij d.
 payd to Nycolas uelow for cordes to þe same lentcloth ij d.
 payd to Wylliam Gyst for cloth to mend þe whytte vestmentes iiij d.
 payd for makyn of the herse xij d.
 payd to Nycolas heddon for nayles to the herse j d.
 payd to Thomas Hykett for kepyng of the cloke by the yere ij s.
 payd to Elysander penvos for russshys by the yere vj d.
 payd for a key to the clarkeys cofer ij d.
 payd to Thomas hykett for a Locke to the clokhouse v d.
 payd for makyn of a pere of slevys to þe whyett vestmentes j d.
 payd for setting of a vote^e to þe cryche yate j d.
 payd for a forme for the hey cryche house iiij d.
 payd for a standyng for the cruytes be side our lady of holmondon j d.

rec. a kercher of the gyft of Mr vyear which ys now here to be delueryd.

1531.

rec. of John marrys for stondyng yn the cryche howse, Saynt Andrew ys in maye^f iiij d.
 rec. of John marrys for stondyng yn þe cryche howse, Saynt Andrew ys day, a fore crystes
 masse^g iiij d.
 rec. of certyn marchantes for standyng by þe cryche howse þe same day iiij d. ob.
 rec. for wode of the topping of þe treys yn the cryche erth ij s. viij d.

paid for ij avter clothys for þe hey auter ij s. vj d.
 paid to Kelly for beryng of the auter clothys to my lord of bodmyn^h j d.

^a The teasele-heads, when cut, require drying slowly in a covered shed from which the glare of the sun is excluded.

^b Fairs.

^c Probably certain ornaments used at funerals; the next entry shows that there had been a death in Thorne's family.

^d *Vide ante*, 1516.

^e Probably foot is the word meant.

^f Translation of St. Andrew, May 9.

^g November 30.

^h Thomas Vivian, alias Wannyworth, Bishop of the see of Megara, *in partibus infidelium*. He was the last Prior of Saint Mary and Saint Petroc of Bodmin. *Mon. Angl.* ii. 460.

paid to S. Water dromond for the bedreden v s.
 paid for a shype to hold frankasens iiij s. viij d.
 paid for a new sense besyde þe old stuffe ij s.
 paid for v yardes of cresse clothe to make racchytes for the chylder xx d.
 paid for makyng therof to Elam v d.
 paid to Nycolas heddon for makyng of a pycyse iiij d.
 payd to John cholwyll for seying to the belles by the yere xvj d.
 paid for iiij yerdes of clothe to make palmar a rochett x d.
 paid for expenses at ij vycystacyons att llanceston ij s. viij d.
 paid for mendyn of iiij bokes of the chyreheys viij d.
 paid for keueryn of a mas boke v d.
 paid for vij yerdes & a quarter of cloth for to make a hoyb^a to S. Wyllyams vestmentes
 iiij s. jd.
 paid for iiij yardes of holland for the heavl. (*sic*) ij s. vj d.
 paid to John ros for a matt for the wendo ij d.
 paid to palmor for mendy of the chych floyr j d.
 paid for mendy of the le gentt^b iiij d.
 paid for a pac of ruseys agenst my lord beschepp cumyn ij d.
 paid for a pac of ruseys agenst master chamy weddyng.

1533.

rec. of John Jule of lamels for to set S. Rychard Denys parson of powdram a pone the bed-
 roll & ij namys mor xx s.
 rec. of John mares for occupying of the churche howse for wyztynge of yerne at þe fere time.
 rec. of John Cholwyll for the occupying of the black sute^a for requiem [blank].
 rec. of John Wolfe for the same black sute [blank].

payd for the changyng of a Chalys ix s. iiij d.
 payd for viij yerdes of lyn clothe to make iiij new rochete ij s. iiij d.
 paid for scouryng of þe gret candelers iiij d.
 paid for þe mending of the Stypell flour viij d.
 [paid] for mendyng of þe blew sute, mete drynk & wages xij d.
 [paid] for iiij new bellropys & cord for þe clock & a lent cord, paid to nycolas vglow v s. j d.
 [paid] for mendyng of the penakyls of þe Stypyll iiij s. viij d.
 [paid] for shelyng stonys iiij d.
 [paid] for a cace for a chalys iiij d.
 paid to John Cholwyll for ij yeres for takyng hede of þe belles ij s. viij d.
 [paid] for paper ob.
 [paid] for a C of hache naylys to dow v d.

^a Query alb.^b A legend book.

1534.

rec. of John Wulfe for the blacke sute xx d.
 rec. for a kertyll pt Esbyll lyl gaue to þe church vj s. viij d.
 rec. of m³ doctor norman for þe black sute iiij d.
 rec. of John William al hele for a knyll iiij d.
 rec. made of our ale xlv s.

payd to heugh corter for makyng of ij new lytyll surpeles & mendyng of other surpels, mete
 and wages viij d.

[paid] for expenses to my lord of cawnterbery^a is visitacon xiiij d.

payd to hugh corter for mendyng off the black sute & suuyng of the church clothyng iiij d.

paid to nycolas heddyn for twystes^b & crokes for þe church howse for the lytill dor yn the
 stypyll a bove þe lyd.

[paid] to a warkman to make a ragg & for þe same ragg^c iiij d.

paid for a hoghed to set lyme in xij d.

paid to m³ vicar for ij syluer buttens for þe cope xij d.

[paid] for a gerdyll for þe vestementes j d.

[paid] for wagges,^d a chessyll, naylys, ij new pygges for þe secund bell.

[paid] for mendyng the rode loft to saue the lyzt at crystes mas ij d.

paid to nycolas Jud for a ye^e to a crok for þe church yate j d.

1534.

rec. ffor a kertell þat xpian Elyt gaue to the church vj s. xj d.

payd for expenses to lanceston for to make awnswer to þe Kynges commyssinors for þe
 church lands xvj d.

paid to Johanna langford for occupyng of hyr howse to drynk our ale vj d.

paid for a nwe manuell bock ij s.

paid for a nwe procecinall bock xx d.

paid to Thomas Taylor for stuff to mak vj new stolys iiij s. vj d.

[paid] for the makyng of them to T. Crympe vij d.

[paid] for blyssyng off þe same ij d.

paid for ij pere of glovys for J. Daw ij d.

^a Thomas Cranmer was consecrated Archbishop of Canterbury, 21 Feb. 1533. Hardy's *Le Neve, Fasti Eccl. Anglic.* i. 24.

^b Bands.

^c Meaning uncertain. In the North a rag signifies a whetstone, but that cannot be the meaning here.
 See 1534.

^d Wedges.

^e The eye into which the crook fits.

paid to John Dromand for pointing & stoppyng of the holes & pynnyng of the pylers yn
 þe north syde x s.
 [paid] for whassheng of þe sowth church vj d.
 [paid] to Wylliam Dromand & John Dromand for makying of the greces^a of the ij yeldes^b
 & setting of þe Ragges xx d.
 paid to Wylliam dromond for pynnyng of þe aulters v d.
 [paid] to heddon for mendyng of þe panne þat beryth colys & the pekes vj d.
 payd for ix yerdes of clothe for to make a new serpels v s. iij d.

1537.

paid for makying of the greces of þe Stypell & for mendyng of the Alyers^c without the
 church for met drynk & wages xvj d.
 paid to wylliam olyuer þat he payd to the masyns for makying of the northe church xij s. iij d.
 paid for ij resters^d iij d.
 rec. for a kertell þt mawte gaue to be sett a pone the bedroll v s. vj d.
 rec. of John Trevelan for a old staff of þe rodeloft j d.
 [paid] expenses at the kynges visitacion at lanceston x d.
 [paid] mendyng of the sylkyn banners & a albe ij d.
 paid to Cholwyll for mendyng of a frame of þe bellys j d.

• 1538.

rec. of John Rowland Jun. for a gowne of the gy3fte of John heddon x s.
 rec. for players at þe church howse iiij d.
 rec. of margery schorte for a gefte þat sche hathe gevyn to the church iij s. iiij d.
 [paid] for expenses to my lord Bysshepp ys visitacon xvij d.
 paid for blessyng a Corporas xij d.
 paid for makying of a standyng to sett þe bokes apone vj d.
 paid to wylliam Gyste for tymber for þe vyce^e x d.
 [paid] for lathys for the same vyce iij d.

^a Steps, "Greece, or tresyl, or steyr, *Gradus*." *Prompt. Parr.* i. 209.

"The lady

Glydes down by the grece and goes to the kyng."

Early Eng. Allit. Poems (E.E.T.S.) 85.

^b The aisles of the chure'.

^c Alleys, *i.e.* churchyard paths.

^d Perhaps rafters.

^e A spiral stair, perhaps for the purpose of getting up to the roodloft. "*Vyce*, rownde grece or steyr." *Prompt. Parr.* iii. 509.

[paid] for nals for the same ij d.
 paid for aryng with a bosc & gemes & naylys for the vice dor xij d.
 paid to Robert Regyll for caryng of gret to make for the wydow ij d.^a
 paid to a hellyer for helping of the wyndow, mete drynke & wages ij s.
 paid to John Bryant for fettyng of Ragges to Tyndagyll xx d.
 [paid] for lathe, naylys for the rodelo3ft wyndow iij d.
 paid to M. vycar Rychard Carlyan for ledd for þe rodelo3ft wyndows vj s. j d.
 payd to John Dromand for hewyng of the pylers vj d.
 paid for paper to make a lyer buck^b x d.
 paid for glasyng of ij wyndows yn the rodelo3ft ix s.
 [paid] for setting of clapers yn sacryng bellys j d.
 [paid] for makyng greysys goyng yn to the church howse dore & for ryddyng of the strette v d.
 paid to thomas hekytt for yryng of the wyndows yn þe rodelo3ft iiij s. x d. ob.
 paid to John Cholwyll is son for setting of þe tymber vp for þe vyce iiij d.

1539.

rec. of Stephyn Daw for iiij yerdes of whyt kersy þat the Irishman gaue to the church to be
 sett a pone þe bedroll & for his knyll vij s. viij d.
 rec. of players for þe churche house j d
 rec. of a stranger for a standing j d.
 rec. for a kertyll þat peter Drum ys wyffe gaue to þe church [blank].

payd to Nycolas mock for coveryng of the kynges bock^c j d.
 [paid] for makyng of ij new beares xiiij d.
 paid to Thomas Taylor for vij yerdes of Dowles & thred for to make a new albe for M.
 arundell ys vestmentes & for lacyng for þe same iij s. j d.
 payd for makyng & 3owyng of the same vestmentes vij s.
 paid for mete & dryng for them þat dyd werke apone the new albe & the old albys that master
 arundell gaue xiiij d.
 payd for a pine (*sic*) of 3ande j d.
 [paid] for wyke yerne ij d.

1540.

paid for the blesyng of the sute of vestmentes þat M. Thomas arundell gaue to þe church xvj d.
 [paid] for the caryage of the same frome Exeter iiij d.
 [paid] for makyng of tapers ij d.

^a This may perhaps signify for carrying of greetstone, *i.e.* sandstone, for making a window.

^b A leger-book.

^c *The Institution of a Christen Man*, was published by Berthelet in 1537.

paid for a new boxe xix d.
 paid for mendyng of the holywater bokytt ij d.
 [paid] for stamyn ^a & thred & gerdels v d. ob.
 payd for viij yerdes of Dowles to make a serpelys & for the makyng of the same v s.
 paid for a new lanterne & ij new crewettes xvij d.
 paid to a plumer far mendyng of the leddes of þ gutters xx d.
 paid for wode for the same & for a man to helpe hym ij d.

1541.

rec. of John Ede yn towne for the wode of the church erthe xxij d.
 rec. of margaret Symon for hyr husband ys grave & for hys name to be regestryd a pone
 the comen beddroll vj s. viij d.
 rec. of Elizabeth marys for ode ^b of the church erthe xj.
 rec. for a old lanterne ij d.
 rec. of Nycholas moeke for old lyncloth xij d.
 rec. of John marys for wytyng yn the church howse viij d.
 rec. of Stephyn drynkyng of a canne of ale yn the church howse ^c j d.
 rec. of Nycholas yerly for drynkyng of a can of ale yn þe same howse j d.

paid for mendyng of the church lyd ^d iiij d.
 paid to the organ maker xij d.
 [paid] for his drynkyn ij d.
 paid to Nycholas moek for mendyng of serples & rachettes j d.
 paid to Thomas Crymp for mendyng of vestmentes & for bokeram viij d.
 paid to John maior for a trusse of Russhes agenst Mr. Arundell ys dafter was marryed iiij d.
 paid for gerdels ij d.
 paid for the bybyll ^e vj s. vj d.
 paid to Water Byttyek for mendyng of the crosse viij d.
 paid to John davy for ryddyng of the church howse gutter j d.
 paid for scowryng of þe grett chendelers & other chendeles ij d.
 paid to John Deamond for caryng of a ymag of our lady xij d.

^a Linsey-Woolsey cloth. *Hallivell*.

^b Wood.

^c This seems to have been a fine inflicted by reason of some local by-law. Probably as the church-house was frequently let to wandering merchants and gipseys, riot and drunkenness followed if ale were permitted to be consumed there except at the duly appointed church-ales.

^d Lead.

^e The great bible, or Crumwell's bible, was ordered by proclamation in 1541 to be put in all parish churches.

1542.

payd for a cord for the lenteloth ij d.
paid for a new dexteloth & a towle ^a xj d.
[paid] for a corde for the organs ob.
paid for iij lockes for the chauncell dores ij s.
paid for bockeram to make the canabe for the sacrament iiij d.
[paid] for mendyng of the church ledde vij s.
[paid] for a erthyn panne to hete þe metyll ij d.
paid to the Organ maker for hys fee xij d.
paid to John mock for makyng of a ladder for the clock iij d.
paid for a chayne for the bybill iij d. ob.
paid for a chayne for the sens ij d.

1543.

rec. of [blank] heddon of pancras wyke for the gyfte of S. Richard Carlyan vicar of þis church of late xiiij s. iiij d.
rec. of Martyn Payle for an olde purse & xiiij botens of sylver & gylte iij s. iiij d.

paid for a cay for the cofer þat was of the gyft of S. Rychard Carlyan ij d.
paid to John Ryng for beryng of Stones owt þe street to church howse ij d.
paid for rering of þe chancell to John mock & Nyeolas mock xij d.
paid to þe same John [Cholwyll] for makyng of a new bear x d.
payd for ryddyng of the backsyde of the church howse & þe beryng of the grete ^b out iij s.
paid for Basterd ys mete & drynke when he brozst ij lode of more stone v d.
paid rypppyng of (*sic*) owt of þe furre of S. John Chamond ys gowne j d.

1544.

rec. of Wylliam Call for vj sponys of syluer of the gyft of Xpian vglow xxvj s. viij d.
rec. of Johan Olyuer for robell Stonys vj d.
rec. of Nyeolas yeo for vj tresys ij d.
rec. of T. hyekyt ix hurdels xviiij d.

paid for sope vj d. ob.
paid for setting vp of the lamp and mendyng þe yr ij d.
[paid] for a trusse of Russes agenst S. John Chamond ys meneday iij d.

^a Towel.

^b The grate was probably an iron grate covering a pit in the churchyard into which refuse was thrown. An arrangement of this kind certainly existed at Louth, in Lincolnshire, where the churchwardens' account books contain frequent entries of small payments for cleansing the grate.

[paid] for a days Journey to helpe mak the pulpytt & to dresse the church mete & drynk iiij d.
 [paid] for naylys for the pulpytt j d.
 paid for tymber for þe payse^a of the lamp j d.
 [paid] for ij brassys for the bellys ij s. vj d.
 [paid] for a Jerre of oyll for the lamp ix d.
 paid for a Locke & a kay for the rodelofte dore vj d.
 payd to Nycholas Wyll for caryng of ij pere of harnys frow lanceston iiij d.
 paid for ij glassys for the lampe iiij d.
 paid for v bushels of lyme ij s. j d.
 paid for xvij bushels of lyme frow be sowthe vij s. ij d.
 paid to John Rowland Jun. for ij bordes for caste[ng] þe led vj d.
 paid for the caryng of iiij jemys of 3ond for cast[ing] the ledd iiij d.
 paid for blessing of a corporas vj d.
 paid to Nycholas Wyll for a M. of lathys ij s. ix d.
 paid for mendyng of the harnys & for poyntes ij d.
 paid for ix yerdes of Dowles to make a per of serpels ij s. iiij d.

1545.

rec. for a remlett of Damaske xx d.
 [rec.] of Wylliam Bend for a Croke of bras xs.
 rec. of John marys for the tymber of the chapell xj s.
 rec. for an olde lanterne iiij d.
 rec. for stondynges a genste þe churche howse wall iiij d.
 rec. for a stondyng apone the crosse doune yn þe strett iiij d.
 recevyd of John payne for a per of bedes of þe gyfte [of] Agnes clerk ij s.
 rec. of Robert hyghedone for a mote^b of a tre vij.
 [paid] for makyng elene of the harnys longyng to þe church vij d.
 payd to Robert Hyghadon for mendyng of þe est church style ij d.
 paid to the same Thomas for ij holbarnes^c ij s.
 paid for poyntes for þe harnys for ij mostryges ij d.
 paid to John mock for glew & nayles for þe organs j d.
 paid for corde for drawyng of þe clothe^d j d.
 paid to Robert Cholwyll for makeng of þe serges^e yn þe chauncell iiij s.

^a A pace, *i.e.*, "a broad step, or slightly raised space, about a tomb, &c.; a portion of a floor slightly raised above the general level." *Gloss. of Architec.* sub voce.

^b Probably the bole of a tree. *Halliwel* has "mote . . . the stalk of a plant. *Decon.*"

^c Perhaps halberts.

^d The lenten veil.

^e Large candles. "I wyte xxlb. of wax in v. serges to birn a bout my body, and afterwards to be lefte to the person." *Will of J. Croxton of York*, 1393. *Test. Ebor.* i. 184.

[paid] to Nycolas Gyst for plates & nalys for lady ys pew & for þe serges ix d.
[paid] to John moeke for setting vp of my ladys pew iiij d.
payd to John Auerry for mendyng & p'mtting of the chauncell þat was left iiij d.
paid to John mock for makyng of legges for þe formys of þe church howse j d.
paid to Nycoles Jyst for myddyng of a shyll of þe lytyll byll ^a j d.

1546.

rec. of master larder for lenyng ^b of þe black sute viij d.
rec. for stondyng a pone the crosse iiij d.
rec. of M. Beauchamp for tyle viij d.
rec. for browse of the church hayge ij d.
rec. of John lamerton for a knyll for lame Johan iiij d.

paid for selyng wex j d.
paid for schuing of a horse ryde to launceston for þe church ij d.
paid for þe hyre of a horse to ryde to launceston for þe church busynes iiij d.
paid to Wylliam payne & Rychard Curry for their expensys to launceston to the commys-
sioners for þe church besynes xxj d. ob.
[paid] for expens' at þe bysshepp is visytacon iiij s. vj d.
paid to bastian for Junyng of a burd ^c ij d.
paid for hangyn of kays j d.

1547.

rec. of Johanna hutton to register hyr husbond the yryshman ys name a pone the comen
bedroll iiij s. iiij d.
rec. of John Beys for a dobelett & a schurte of the gyfte of John Ede x s.
rec. for regestring of Wylliam hor ys name, þat was received for a cote viij s. j d.
rec. for a schurt þat John Puddener [gave] for to register his name iiij s. iiij d.
rec. for a Cote þat Tege Kelly gaue for to register his name vj s. j d.
rec. for Wylliam Coper ys gowne x s.
rec. for rogger puddener ys schurt iiij s. iiij d.
rec. for Standyng agenst the church howse vj s. viij d.
rec. of the scolemaster for the same howse iiij d.
rec. for a serpsels iiij d.
rec. of Water Rose for a crock for hys systre alys Batyn ys gyft iiij s.
rec. of Stephyn Daw for a cot vj s. viij d.

[paid] frythyng ^d of the church heyge for frythe, mete & drynke xvj d.

^a Bell.

^b Lending.

^c Joining of a board.

^d "Frith, to plash a hedge. *Devon.*" *Halliwel.*

paid for ij pownd of frankencens vj d.
 paid for oyle for the lampe vj d. ob.
 paid [for] sylkyn poyntes for the best cope j d.
 paid to Rychard call for makyng a crosse cauell for a bell viij d.
 paid for a manuell buck xxij d.
 paid for a new bear xij d.
 paid for wex þet was bozst mor þen the parysh gaue for to mak tapers xx d.
 paid to poremen at the comondement of the viij men ij s.
 paid for taking downe of the Image of Seynt georg iiij d.
 paid for lockes, gemes, naylys for the kynges cofer iiij s. iiij d.
 [paid] for makyng of the pulpytt xxxiiij s. iiij d.
 [paid] for Irestuff^a for the same iiij s. vd.
 payd for bordes for the pulpytt xvj d.
 paid at the kynges vysitacon [for takyng of Inventory]^b iiij s. xj d.
 paid at the kynges visitors for expenses vj s. viij d.
 [paid] for makyng of kynges cofer & the setting xx d.
 payd for ryngyng of þe kynges knyll^c v d.
 [paid] for a compulsion [and] other charges a bout m; vicar xxviiiij s.

1548.

rec. of the scolemaster for peces of felvott^d ij s.
 rec. of Nycolas Symon for a kertell vj s. vj d.
 rec. of Thomas Arundel ar. for ij peces of felvott vij s. viij d.
 rec. of John Cobeldyck for ij barels þat cam with lyme viij d.

payd for takyng downe of þe horse of þe Image of seynt georg & of ij standynges mor viij d.
 paid for stuff for the church harnys when þ besynys was be west vj d.
 paid for paper at þe muster ob.
 paid for mendyng of a Chalys ij s. x d.
 paid to Roger yeo for a boek of þe pystels & godspels viij d.
 paid for the Rode takyng doune viij d.
 paid for þe ij pyckters of þe northe syde & south syde^e vj d.
 paid to Rychard Curry for ryding to bucklond for the Chalys & other stuff, master John Trendfyld demaunded xvj d.
 paid to John moeke for makyng of a hole in ye kynges cofer ob.
 paid to a masyn to make the north wyndow of þe church vj s. viij d.

^a Ironwork.

^b The words in brackets are crossed out.

^c The death of Henry VIII. happened on 28 Jan. 1547.

^d Velvet.

^e "Taking down" is evidently omitted here.

1549.

rec. for viij clothys þat couered Images vj s.

payde for makyng of þe kynges Inventory for the church good & for paper vij d.

[paid] for lacyng for þe comunyon boek ij d.

paid at þe vyzytacon at launceston yn expenses iij s. iiij d.

paid for taking downe of þe Rode & þe pagentes yn þe Rodeloft & setting vp the Rode
a gen^a x d.

payd for a staff for a holborne^b & for a peke^c for the same vj d.

paid for mending of iij per of harnys iiij d.

paid for a quitance for þe pardon at launceston iiij d.

paid for makyng of a per of Indentures of þe harnys send to lanceston vj d.

paid to Wylliam Rodd for a mare, which the paryashe was content to pay for, þe mar, yf he
had not hys mar agen xx s.

He went to launceston to haue his mar & cowde not have hyr, hys expenses & labour
was viij d.

paid to John Trevelyan for iij new bookes notyd for matens & evensong & matens yn yng-
glyssh xvj d.

1551.

Rec. of John Antony for the lent clothe v s. viij d.

Rec. of Nicholas yeo for the great sepulere clothe iiij s.

Ressevyd of the same Nycholas for iiij old paynted clothes viij d.

Rec. of Roger yeo for ij blew clothes xvij d.

Rec. of John Marres for iij old clothes xxj d.

Rec. of Nycolas Symon for ij clothes viij d.

Rec. of Nycolas towyll for a Rowde clothe iij s. iiij d.

Rec. of Johanna Rowland for a clothe xiiij d.

Rec. of Nycolas Symon for clothes xiiij d.

Rec. of John Anthony for old clothes x d.

Rec. of Jorge maior for a yeold cloth iij d.

Rec. for Stoannes of the awters iiij s. iiij d.

Paid at the kynges vyzytacon iij s. iiij d.

Paid for makyng a per of Endentors of the churehe good xij d.

Paid for the Clareke of wick is denner iiij d.

Paid for drawyng downe of the auters ij s. iiij d.

^a Roods had been taken down by Royal authority ; but on the 10th of June the Devonshire rebellion broke out, and the authorities of Stratton took advantage of this to restore the ancient state of things.

^b Halbert.

^c Spike.

Paid for expenses when we apperyd befor my lorde iiij s.

Paid for sowynge of the curtayne j d. ob.

Paid for whyttlymynge of the churche iiij s. iiij d.

Paid for our expenses at the vyjtacon at wick x d.

The which mony [x s. x d.] Nycolas baund hath ressevyd in part of payment for his horse which he lost in thes besynes^a & the viij men wer agred that the sayd Nycolas should haue xxv s. for hem & ther rest to hem for hes horse v s. v d. ob.

1553.

Rec. of Nycholas Judde for brasse iiij li. iiij s. vij d.

Rec. of Richard call for a basyn and old yre iiij s. ij d.

Rec. of Thomas Jewell for a vyare pan^b iiij d.

Payd for the communion boke iiij s. iiij d.

[paid] for mendyng of the challys xvj d.

payd to ysabell Judde for wyne xx d.

payd for the expensys of iiij men to go [to] lestwythyell before the kynges comyssoners iiij s. x d. ob.

[paid] for a new sofell^c xvij d.

payd to ij men to ryde att lancestone to ye vycytores ij s. iiij d.

[paid] for þe Ryngyn off [the] kynges knytle^d iiij d.

payd vn to wyllly Rodde & to N. Gyst for pese off Clozth off Gold þat whasse lefte yn þeir handes xvj d.

payd vn to John Rowland for a cherg^e for þe canepy xiiij d.

payd vn [to] Rychard Calle for Crookes þat whas str'aed of wyllly balechyd vij d.

payd att Ester for wyne forth vn tyll sent John daye iiij s. iiij d.

payd for þe makynge of þe Taperes j d.

payd vn to master Jule for þe singing bred^e ix d.

1554.

paid for corde to hang the sepulcar j d.

paid for a proressynall & a whole manuall vij s.

paid to Wylliam whore for the fetyng of them at exsater iiij s. x d.

^a "Thes besynes" is undoubtedly the Devonshire rebellion.

^b Fire pan. A vessel no doubt used heretofore for the Easter-fire.

^c Shovel.

^d Edward VI. died 6 July.

^e The word is doubtful; perhaps chain is meant.

^f Altar breads.

paid to Thomas clarke for makyng off ij taperes & candeles ij d.
 paid for a emanuell to Jams the cok iiij s. iiij d.
 paid to Nycholas Jud for bollyng ^a of ij claperys vij s.
 paid to Richard call for a basyn of latyn ^b ij s. vj d.
 paid for makyng off a clapore to the leche bell ^c j d.
 paid to Richard carre for a pyex ij s. viij d.
 paid for wykyerene ^d & makyng ij d.
 paid to bastyng for a banar stafe ij d.
 paid for a hally water bockyte vj s. viij d.
 paid to Richard curre for tymber for to make possys ^e for the bordes of the churche hosse vj d.
 paid to lok at the syys ^f at lanstone for hys feys ij s. vj d.
 paid for the lone of a horse to Ryde to London vj s. viij d.
 paid to master Wylliams our counceill vj s. viij d.
 paid to vyncyng calmady our turney ^g iij s. iiij d.
 paid to master browne a turny off the exchekere iij s. iiij d.
 paid for scharchyng ^h off master lege offys for to haue a copy off our charche to mak our
 ple by.
 [paid] for the expenses of John Jude & hys horse for v wykes lacking a day iij li. iij s.

1555.

Receuid of Robert the voler ⁱ for a bott ^k vij d.

payd to John giste for a bocke ij s. viij d.
 paid to nicolas gyste for mendyn of the harellose vj d.
 paid to the same man [Richard caulle] for the kechyn dore for a hapes ^l ij d.
 paid for lyncloth for mending the vestmentes ij d.
 payd for candeles at crysmas for the quiere iij d.

^a To swell as a pod or seed. "And the flax and the barley was smitten, for the barley was in the ear and the flax was bolled." *Exodus* ix. 31. The ends of bell-clappers become worn small and flat by use; what is here meant by their being bolled is that fresh iron was added, and that they were made once more round and heavy.

^b Latten. The hard mixed metal of which sepulchral brasses were made.

^c A hand-bell used at funerals. A.-S. *Lic*, a dead body.

^d Wick-yarn for the candles.

^e Posts. These posts were probably set in the ground in the church house and the boards laid upon them to form tables at the ale-feasts and when the house was let to merchants.

^f Assizes.

^g Attorney.

^h Searching.

ⁱ Fowler.

^k A butt. Lime was frequently carried inland in casks. This "bott" was probably a lime-barrel.

^l A hasp, a latch.

1556.

Recevid of the clarke for his chamber on quarter iiij d.

[paid] for vj men charges goyng at the byshoppes ^a visitacon vj s.

[paid] for makyng of the pascall taper j d.

paid to Roger you for the clothe to cover þe Rode ij s. viij d.

paid to Nycholas gist for a spang for the grete bell whele ij d.

paid to edward hortoppe for þe holy water bokytte on the cherehe porche xix d.

paid to John dromont for ij days for makynge vppe the high auter for his wages & mete & drynke xvij d.

paid for the beddemans Rochette xvij d. and for makyng of þe same and mending of anoþer iiij d.

paid for candelles at Christmas for þe quere ij d.

paid for a Lantrane for þe cherehe xiiij d.

1557.

[paid] for ij li. & d of wex to mak the pascall taper ij s. viij d. ob.

[paid] for makyn of the same j d. ob.

[paid] for the eyeres ^b at the awteres end viij d.

[paid] for paryn vnder the chorch howee Ovys ^c xiiij d.

[paid] for ij awter towyles x d.

[paid] for a cloth for the desk xvj d. ob.

[paid] for makyn of the same ij d.

payd more for candyles to serve cresemas day yn the mornyn ij d.

1558.

payd the veker of powghyyl for ij li. & a quarter of wexe to mak the pascall taper xj the li. ij s. ob.

[paid] for viij yerdes & d of holond to make the lent clothe at x d. þe yerde vij s. j d.

[paid] for Rynges & lasyn for the same iiij d.

[paid] for a nyew ymnor ^d ij s.

[paid] for a poynsyn ^e to put lyme ynto.

[paid] for pentyn of synt androw iij s. iiij d.

[paid] for makyng of the pallm crosse vj d.

^a James Turberville, consecrated 8 September, 1555. Deprived 1559. Hardy's *Le Neve*, *Fasti Eccl. Anglic.* i. 378.

^b Iron hooks or rods to support curtains.

^c Eaves.

^d Hymnal.

^e Puncheon.

[paid] for ij ti. & di. of lede for the same ij d. ob.
 [paid for] thre yerdes & di. of dowlys for a nawter^a clothe viij d. ob. þe yerde ij s. v d. ob.
 payd for candyles to put vpon the banner staffe j d.
 payd for makyn of a hole water spryngyll j d.
 [paid] for poyntes yn makyn vp of the sepulker j d.
 [paid] for a ti. of frankyn sens vij d.
 payd for a loke to the vonte^b vj d.
 [paid] for d. a ti. of wexe to help make the taperes be fore þe Rowde vj d.
 [paid] for webe yerne^c ob.
 payd John Strete for a bull neke to macke ij nyew colleres^d ij s. iiij d.
 [paid] for heddyn & glewyng of thre sheue of errowes^e iiij d.
 [paid] for a dosen of heddys to the same iij d.
 payd buttycke for mendyn of the holle water bukkyt viij d.
 payd for bryantes dener when he came to haue mayd þe chorche stele iij d.
 [payd] for xxviij yerdes of dowleys to make iiij nyew serplesys at viij d. ob. the yerde
 xix s. x d.
 [paid] for makynge of thre Racehytes v d.
 [paid] for mendyng of the banner of sylke j d.
 [paid] for makyng of the chownsyll dore keye iiij d.
 Delyveryd thomas whyte thre ti. d. of wexe to make taperes agaynst cecemas be fore the
 Rowd at xij d. the ti. iij s. vj d.
 [paid] for makyng the same iij d.
 payd for a banekyt to the bell founder & to wother þt laboryd aboute þe bell x d.
 [paid] for candylles, cecemas daye yn the mornyng ij d.
 payd nycolas geyst for makyng of wadies & tweystes a bowte the grete bell xvij d.
 payd for d. a quere of paper for thys bocke ij d. ob.
 [paid] for thre ti. of sowpe,^f the which we have occupyd thys yere xvij d.

1559.

Recevid of Jewes^g for the church howse ij s. vj d.

^a An altar-cloth. Cf. *Mon. Ang.* iv. 320. "A nold mylne," 1442. *Archæologia*, xli. 340. "A nax," 1498. *Louth Churchwardens' Acc. MS.* iv. 94, "for a nabstrack for the svers," 1637.

^b Fonts were ordered to be locked to hinder superstitious persons from getting the water to use it for purposes of magic. "Fontes sub sera clausi teneantur propter sortilegia." *Conc. Dunelm.* A.D. 1220. Wilkins's *Conc.* i. 576.

^c Sheet-iron.

^d For the bells.

^e Arrows.

^f Soap.

^g "Jewes" is not erased; but "Jeptyons" is written above it in another, but contemporary, hand. *Vide ante*, 1522.

payd for iiij ti. of wexe for the pascall taper xij d. the ti. iiij s.
 payd for ij ti. & a halfe to barne befor the rode xij d. the ti. ij s. vj d.
 payd vnto symon holman for iij cases of aros xvij d.
 payd vnto peter quike for a alder tree ob.
 payd for a new beer xij d.
 payd for wod a ester yene^a j d.
 [paid] for poyntes & pynes yn maken of the sepulker j d.
 [paid] for ij precessional bookes vj d.
 [paid] expensas for John Jude to bryng a communing book from exceter xvj d.
 payd to Jone yeoe for bred & wyne for the communing vj d.
 payd vnto Rychard Call for the eire^b that berethe the deske vj d.
 payd for book of iniunction v d.
 [paid] expensis at the boshypes vication for vj men at bodman xvij s. ix d. ob.
 payd vnto basten laurence for maken of the table iij s.
 [paid] for a sauter booke xx d.
 payd for a quart of wyne agaynst cristmas v d.
 payd to the aforesayd John drome for maken of the sepulker ij d.

1560.

Receuyd of þe Jepsyons on ny3th yn the church howsse iiij d.

paid for v yerds of lesson (?) for þe bybell j d.
 paid for wyne a gayn ester xvij d.
 paid for comvnion bred x d.
 paid for a cope^c a gayn ester iiij d.
 paid for a tresse for þe orgaynys j d.
 paid to thomas ollver for menden off the hoges hed to put lyme yn hytt j d.
 paid for a comvnion bok iij s. viij d.
 paid for poyntes for harnes j d.
 paid for ij bowe strynges j d.
 paid for iij lether gyrdelles vj d.
 paid to dromont for wassen off the Rowd loft & menden ij holles yn the church j d.

1561.

rec. of the Jepeyons for the church howse iiij d.
 rec. of John kedner the old clarke for a half a years rent for his chamber viij d.
 payd for bread & wyne a gaynst ester iij s.
 payd for the commundementes and a calendar ij s.

^a For the Easter fire.

^b Iron.

^c Cup.

paid for vyllynge ^a of the tree vj d.
paid for a cott clothe for Wyllyam Juell ij s. viij d.

1562.

Rec. for standen a gaynst the ponyon (*sic*) of Wyllyam yoe ys schope with owtt þe church
stell ij d.

paid for ij . C of howesselen bred xiiij d.
paid for wyn ij d.
paid m. offycyall to schow our Regester boke att the vycytaeyon vj d.
paid to Mr. vycar for taken owtt of þe names vj d.
paid to a mynyster to help play & syng iiij d.

1563.

Receivyd of Jone cortes for musterd sed viij d.

paid for a newe bottell of tyne xij d.
paid for ij hundred of howeslen bred xij d.
paid to basten for Removen of a sege ^b yn to the north yeld ^c xvj d.
paid to John avere for setten a glasse ouer þe organs iiij s.
paid to John marres for makyn of awnsur for þe Rodloffit xij d.
paid for iij New bokes iiij s.
paid for viij yerdes of howeland for a serpellles xv s.
paid for makyn therof ij s. vj d.
paid to petter quyk & John cleuedon for songes for the church þat thay boutt att bod-
man xvj d.
paid for iiij yerdes of cloth for the tabell v s. viij d.

1564.

payde for wyne agaynst Easter ij s. iiij d.
paid for communion bred x d.
paid to nycolas bond for lone of his horse when mr. marris & John Jud rode to exeter xxj d
paid to wylliam Wyll for lone of his horse the same tyme xvij d.
paid for taking downe the sylyng & a beame of the roodloft ix d.
paid for a C of communion bred v d.
paid to bastyn for setting forthe of the seat for the quyre vj d.

^a Felling.

^b Seat.

^c Aisle.

1565.

Rec. of Ryeherd mark for dewyn^a of Woll yn the church howsse^b iiij.
 paid for howselen bred xj d.
 paid to a man when the bell was deleuered to the bell founder & to tarre^c ther tyll he^d was
 mylltt^e met & hyer viij d.
 paid for drynk to them that bore the bell to the pytt iij d.
 paid for drynk to them prt did drawe the bell from the pytt & when he was hang vp viij d.
 paid to hem [John Megar] for on daye ys worke a bowtt the belles & hawssyn of the bem
 pat bar the lede viij d.
 paid for newe songes for the church ij s.
 paid for a nother lyttell bok ij d.
 paid to John megar for takyn down of the Rowd lofft mett & hyer vij d.
 paid to the yeryshman for menden of the clark ys chamber iiij d.
 paid to the v boyes a gainst crystemas to help the quyer xx d.
 paid to mr. Vycar for hallft a new bok v s.

1566.

Receuid of John antone for ayer (*sic*) which we sould iij s. iiij d.
 payd bastyn for makyn of setys for chyldrin vj d.
 payd for peteres fethinges^f at þe same visitasion xvj d.
 payd vnto þe ermerer for dressin of the harnis iiij s.
 payd yn Ridin at louston be fore the comischeneres yn chargys of ij men iiij s. viij d.
 payd choppe for makin of mettis to serue before þe comeunion tabil xij d.

1567.

[paid] for a quer of paper for the syngyne bookes for þe cherch iiij d.

1568.

[paid] to Robart nelles boye for fettin of the church dower kye j d.
 [paid] for menden off the vestementes ij d.
 [paid] to symon hollman for howssele bred j d.

^a Doing, *i.e.* putting.

^b It was the practice in some parts of Lincolnshire in the last century for farmers to store their wool in the church. Walker, in his *Sufferings of the Clergy*, speaks of Joseph Shute, the rector of Meavy, co. Devon, in the time of Charles I., having "set a considerable parcel of wooll and money in the church tower," ii. 355. My own ancestor, Edward Peacock, was in the habit of keeping his wool in the nave of Bottesford church in the latter end of the reign of George II.

^c Tarry.

^d The word "hytt" has been first written, then crossed out and "he" written above it.

^e Melted.

^f Peters farthings are mentioned in the parish accounts of Hartland's Devonshire. *Hist. MSS. Com. Rep.* v. 373.

1569.

receuyd of John hewe to be beryed in the cherche & his knyll vj s. viij d.

[paid] to John Corye for caryng of the bebell to exceter and home a gayne x d.

[paid] for towe strynes for ij bowes ij d.

[paid] for towe dosen of pontes for the hernes iiij d.

[paid] to v men that ded where the hernes at Jacobstowe x d.

paid for a bowe for the cherche iiij s.

1570.

rec. for the chalys xxxvij s.

rec. for cherubymys sold xx d.

rec. for ij peces of olde bockes sold xij d.

rec. for an earnest to the sale of the rood laught iiij d.

paid for the statute of rebellion xij d.

paid to Nicholas oliuer of sent tives for a song of te deum xij d.

paid for mendyng of John Judes bybell which he lonyd to the churche when the other was to
bynd iiij d.

paid for ij ti. qr. of flox to stuff the cussin for the communion tabel vj d.

paid for the communion cup ij ti. xix s.

paid for a newe communion bocke & a psalter in the same vj s.

paid for a sawser to put the communion bred on iiij d.

paid for a key & neles & other thinges aboute the organs iiij d.

paid for bering of the planching of the rood loft vnto the church hous ij d.

1571.

paid . . . for howslen bred agenst ester ix d.

1572.

rec. of Walter yeo for a basket v d.

rec. of Edward dunne for ij cruetes iiij d.

rec. of Richerd pryst for a cofer v s.

rec. of John yeo for a chest vj s. viij d.

rec. of John cory for a corporas case vij s. xj d.

rec. of Symon holman for ij candell stickes xix d.

rec. of master marrys for woden angells iiij d.

rec. of William heddon for a bason iiij s.

paid for a lytell met for mr. vicar to knele on ij d.

paid for caryng vp tymber in to the tower to vnhang the bells vpon & for vnhangyng of them xij d.
 paid for a baue string j d.

1573.

receuyd of thomas badcock [for] the peces off the Rode loft vj s.

paid for a bok of prayer vj d.
 paid to John Corre for a Cxij of communyon bred viij d.
 paid to ij men to tak down þe Rowd loft mett & hyer x d.
 paid for cloth & menden of þe clerkes serpellles iij d.
 paid to Robart sander for his expences att launston att the quen ys vysytaeyon vj d.
 paid for iij yerdes of howeland for the communyon tabell att xx d. the yerd vj s. viij d.
 paid for makyn ther of j d.

1574.

payde for a boeke of prayers xij d.
 payde for hangynge oute of the artycles xij d.
 payde . . . for mendynge of the church cate^a iij d.
 payde vnto nycolas moeke for to carrye the mouster arrovs vnto ponstock to be newe fetheryd j d.
 payde vnto Jhon tome for the fetheryng of ij dosen of arrovs xij d.
 payde for foure newe arrovs iij d.
 payde for a boek callyd my Lorde Jules boeke xij s. iij d.
 payde for carrydge of the same boek & expensys vj d.

1575.

paid for a trece for the orgenes j d.

1576.

payd for syngyng bred x d.
 payd to John yeo marchant for the cover of þe communion cup xvij s. vj d.
 payd to the commyssioners for the dyschargyng of the hattes vij s.
 payd to S. Wylliam palmer for the brynging home our dyscharg for þe same ij s.
 payd to george the penter for drayng of the X commandmentes v s. vj d.
 payd to nycholes Wyll for thre bordys to drae the commandmentes iij s.
 payd to the church of bath v s. ij d.

^a Gate.

1577.

payd for mendyng the paasmentt in the church porche 2 d.

payd for a new keye for the Stookes 2 d.

payd to thomas Calle for makyng a new Cock to a calyuer ^a & for mendyng of a shaft 8 d.

[Undated Inventory in the handwriting of the person who kept the
accounts in 1553.]

The cownt of the church Stuffe.

It. a chales, a swtt of blak worsted with ij coppes but ther lakytt a . . .

A per of vestementes of Red vellvett.

A per of vestementes of lwkes ^b gold.

A per of vestementes of whyt damask.

A per of yollo sylk, ij frutes of yollo Sylk with ij cortens, v per of Serpelles and iiij
Rochattes, iiij Auter clothes and one towell.

A clothe for the pyxk and ij fawnt clothys, v corporis cassis and ij kyerchares.

A pall for the hyerss and a streamer of sylk.

A letten brassen, & a per of candell stykes.

A skones, a chessabell of blwe sylk.

A carpett for the tabell.

The stuff that be longeth to the church howesse.

It. iiij tabell bordes, vj long tresseles of ellme.

It. iiij ellme planks, ij tresseles for fyssyeres.

It. a dresen bord for the kychyn.

It. iiij assen planks.

[Undated Inventory in a different hand to the foregoing.]

It. to chalys.

It. a sute off vestmentes off damask.

It. a sute off blake worstyed with to coppes.

It. a pere off vestmentes off Rede velvett.

It. a pere off vestmentes off lekeys ^b gold.

It. a pere off vestmentes off whyt damaske.

It. a pere off vestmentes off blewe satyn.

Culverin.

^b A material which probably took its name from Lucca, the place of its manufacture. There was a "clothe of luks gold" at the Benedictine nunnery of Catesby, Northamptonshire, at the period of the dissolution. *Archæologia*, xliii. 241. In the wardrobe accounts of Edward I. mention is made of Lucca cloth. *Ibid.* xxvi. 337.

It. a pere off vestmentes off yalow selke.
 It. thre ffronttes off selk with a pere off cortynes.
 It. viij pere of serpylles & iiij Rochett.
 It. iiij auter towyl.
 It. a pall for a herse.
 It. to crose banners & a streamer off selk.
 It. to howselyng towelles & ij fant cloth.
 It. a Rede ffront.
 It. a cloth ffor the sacrament.
 It. a pere of sensers.
 It. a crosse & a staff of copper gellte.
 It. a pexce of copper.
 It. a sence of copper.
 It. a scheppe.
 It. a lattyn basyn.
 It. a pere of candelstykes.
 It. a cope of velvett, and a per of vestmentes of . . .
 It. x peces of velvett and a stole of . . .
 It. a Lantran & a nyew deskecloth.
 It. a new rowd clothe.^a

Liber Compet' Gen'al Recepto' S̄ci Andrie de Stratton.

1532.

Rec. of Isbell Jude & Johanna Chyng our lady maydens xx d.^b
 Rec. of John sehore & Rychard Chyng hyecross wardens xl s. vj d. ob.^b
 Rec. of Robert Regyll & Walter Bryant wardens of sent armyll xxvj s. ij d. ob.^b
 Rec. of John vglow & John Sangwen wardens of our lady of holmadon xx s. vj d.^b
 Rec. of Robert vglow junior & John marten wardens of Sent George xxvij s. v d. ob.^b

1534.

Rec. of the gyyste of S. John Chamond knyght xxvj s. viij d.
 Rec. of alhalwen yele xxvj s. viij d.
 Rec. of Sent Andrew is yele by the handes of Thomas marys xxvj s. viij d.
 Rec. of our lady yele by þe hondes of Nyeolas Jude xxvj s. viij d.
 Rec. of Orystes yele by the hondes of Nyeolas yoe xl s.
 Rec. of sent Thomas yele by the hondes of Nye. Wyll xij s. iiij d.

^a The two foregoing inventories are given in full.

^b Entries similar to these occur annually.

Rec. of Sent George is store by the handes of Wylliam Sparke xx s. ix d.

Rec. of John Beare for hys fyne xxvj s. viij d.

payd to the organ maker xxvj s. viij d.

paid for vj lode of more stone xiiij s.

payd to John Dawe the keruer yn parte of payment of hys bargyn xiiij li. vj s. viij d.

1535.

Rec. of Thomas Taylor junior for a heryott for the deth of Wylliam vglow xiiij s.

payd to John Daw the keruer yn parte of payment for the makyng of the Redeloft xiiij li. vj s. viij d.

paid for bred & drynke for them þt caryed home the more stone frow efford þt made þe new pyler iij d.

paid to Rowelyff is servant for pynnyng of the old pylers vj d.

paid to John Jule Crowder^a for beryng of the olde stuff of the Rodeloft to a house of Wylliam Gystes iij d.

paid to the mason þat made the wall ouer the wold pylers for ij days Journey mete & drynke & wages xij d.

1536.

Rec. of John marys & of hys company þat playd Robin hoode xxxviij s. iij d.

paid to John mayow & other of þe iij men of kylkhampton for centerus^b to schett þe archys viij d.

paid to John mock for makyng of þe same cynters x d. ob.

paid to John Daw yn parte payment for þe Rodeloft xiiij li. xiiij s. iij d.

1538.

rec. of Robyn hode & of hys men iij li. x d.

payd to John Daw yn parte of payment for þe rodeloft xvij li. vj s. viij d.

1539.

rec. of John Rose for the old Story of þe Rodeloft vij s. vj d.

payd to John Canne for makyng of the dore for the Rodeloft xx d.

paid to John Dromand & to Robert payne for makyng of the vyce for þe Rodeloft ix s. iij d.

^a A fiddler.

^b Centres : wooden supports on which the arches were built.

paid for caryng of ij lode of morestone for the wyndows yn the Rodeloft v s. vd.
payd to John Daw pis yer for the Rodelofte xiiij fi. xiiij s. iiij d.

1539.

payd to John Daw for the Rodeloft xij li. liij s. iiij d.
payd to Thomas Hekytt for yre warke for the Rodeloft xlv s. iiij d.
paid to Nycholas Kyng for fettyng of a Image to thanton iiij d.

1540.

paid for beryng of a letter from S. John Chamond to penhele viij d.
payd for kepyng of a marre to Thomas Nycolson xiiij d.
paid more for þe same mare viij d.
paid to pozwyll church for S. Nycholas Gyft ys gyft þat we shuld pay for þe chalys þat he
gaue to þe church vj s. viij d.
paid to John Trevelian for makyng of a new bedroll ij s.
paid to Nycholas Wyll for þt the priest dyd sue for þe buckes^a v d.

1541.

paid for M. Thomas Arundell ys denner & other cumpany of þe parish þt cam with hym
xij d. ob.
paid to John marres for hys expenses to ryde to exeter to the Kynges collectors for the
chauncell vj s. vj d.

1542.

paid to John mock for drawyng doune of our lady chapyll ij s.

1543.

rec. of Marthe Rose & Margaret Martyn for the wode of Robyn hode is howse iiij s. v d.
paid to John daw the keruer for a reward of the parishe vj s. viij d.

Expenses for makyng Cross yn the towne.

Md. paid to brok þe mason for viij days Journey for makyng of the sam crosse ij s. viij d.
It. paid for vij days Journey more xxij d.
It. paid to George Jule for iiij days Journey xij d.
It. paid to mathe Rose for caryng of grett^b & makyng off mortar viij d.
It. paid to the same mathe & for hys man for serue the masons iiij days mete drynk &
wages xij d.

^a Books.^b Sand.

It. paid to þe same mathe for iiij boeshels of lime ij s. iiij d.
It. paid to Rychard foster for caryng of stonys to þe same crosse iiij s. viij d.
It. paid to George Jule for drayng of þe same stonys & other stonys xvij d.
It. paid to the same mathe for v peck of lyme more ix d.
It. paid for mete & drynke fortentyt & iiij days for the masons ij s. viij d.^a

1544.

rec. of John Kympthorne, of the kynges grace is mony yn parte of payment for byldyng of the chancell v li. vj s. viij d.

paid to Rychard Walshe for a lampe xij s.
paid to Thomas clerk for makyng of the wache howse ix d.
delyuered to John Auery for harnyss xxxiiij s.
paid to Stawfor & Georg Jule for takyng downe of þe chancels viij d.
paid to Stawford & the same georg for the makyng of the chancell yn parte of payment xxxij s. iiij d.
paid to John mowr for Rowtyng^b of a tre iiij d.
paid for makyng of the bekyn at launcels viij d.
paid to John mayor & W. Sharke for makyng of the alters v s.
paid to Nycolas mocke for ȝayng^c of the bottome of þe elmys vj d.

1546.

rec. of Nye Jude & Rye Curye for plate of Syluer vj li. ij s. iiij d.

Expenses delyuered to Rychard Chamond armiger for goyng yn the kynges grace ys besynes iiij d.
payd to the sawdyers xx s.
paid to Thomas kekyd for ij swerdes & ij daggers v s. iiij d.
paid for ij yerdes of Crymsyn velfot xxiiij s. iiij d.
payd to the vestment maker for makyng of þe vestment vj li.

1547.

paid to bodyseastyll men for to make a hawne v s.

1547.

delyuered to Wylliam Grove & Stephyn Daw for the besynes þat was yn the west parte x s.
paid for bred for them xvj d.

^a This account is given without abridgment.

^b Uprooting.

^c Sawing.

paid for chese þat they had with them xj d. ob.

paid to Mr. Thomas Arundell by the hondes of Wylliam yeo, to pay them þat went west at
þis besynys xxxj s. iiij d.

paid to Wylliam fote for the parysshe gyfte for the kay of Tyndagell vj s. viij d.

paid to master vicar for ij Grayle ^a buckes xvj s. viij d.

paid for caryng from peryn to bodman viij d.

paid to John vglow for caryng of them frow bodman x d.

paid to m^y. vicar for halfe parte of a buck callyd Erasme ^b vj s.

^a Gradale, Lat. A book which contained the gradualls and some other parts of the eucharistic service.

^b "The paraphrase of Erasmus vpon the newe Testament." London, Whytchurch, 1548-9, folio.

VIII.--*On two Gold Ornaments of the time of Theodoric, preserved in the Museum at Ravenna.* By COUNT FERDINAND DE LASTEYRIE, *Membre de l'Institut; Hon. F.S.A.*

Read May 2, 1878.

THE city of Ravenna possesses a museum adjoining the municipal library, and known by the name of "Museo Classense." It is not often visited by foreigners, whose attention is generally absorbed by the splendid ancient buildings of which that town is still so full.

The Museo Classense, it is true, is not to be compared with many others in Italy. It is not a large one; it contains however some very curious antiquities. One, among many others, especially arrested my attention when I visited the collection. It is a pair of gold ornaments, inlaid with very thin laminæ of oriental garnet, the form of which would be very difficult to describe excepting by a drawing.

It will however be seen from the drawing which accompanies this account (Plate VII.), that the two pieces are of irregular but symmetrical form. They are generally considered as being costly ornaments fastened on the forepart of a cuirass or of some leather garment, some kind of *lorica*. It is said that a metallic cuirass was found in the same excavation. That would decide the question. But at the first moment of the discovery, some workmen, escaping the too remiss vigilance of the archaeological committee appointed to watch over them, stole nearly all the valuable objects found in the sepulture, three of which only could be recovered, viz. the two above-mentioned ornaments and an irregular piece of similar work considered as having formerly belonged to the ornaments of the same warrior's helmet.

The two cuirass ornaments are the most perfect specimens of workmanship of the kind that I have ever seen. They are not flat, but consist of a central raised band with a border on each side. The pattern throughout is the same, composed

of nine fillets, of various designs, running symmetrically so as to make the transverse section of any part of the bands the same.

Nothing can give an adequate idea of the regularity and delicacy of the work, in which thousands of minute pieces of oriental garnets are inlaid and separated from each other by thin gold partitions.

It has been remarked that the exterior border of the band on both sides presents to the eye the same pattern as the cornice of the well-known mausoleum of Theodoric, which the Italians call the Rotonda.^a

To what particular art those magnificent ornaments belong, is, in my opinion, not doubtful. They constitute one monument more of that special art whose traces we find in all the countries which were successively overrun by the Goths, first in Vallachia at Petrossa, then in Hungary, and in Burgundy; which we discover in Italy with the Ostrogoths, in Spain with the Visigoths, and a little later in England with the Saxons.

Ravenna, it must be borne in mind, was successively the capital of an Exarchate, with which Odoacer, King of the Herules, was invested,^b and the seat of the new kingdom founded by his fortunate competitor Theodoric at the end of the fifth century. Both of these rivals were of Gothic origin, although of different branches of that wide-spread nationality. Consequently, the valuable jewels kept in the Museo Classense, whoever may have been their first owner, must be considered as specimens of Gothic art.

The Italian savants, and especially Signor Giacomo Zabberoni, who published an account of these ornaments, incline to consider them as a part of the armour of Odoacer. Indeed, from the richness of the work the relics could only belong to a prince or to some other eminent personage. But is there any sufficient reason to attribute them to Odoacer himself rather than to any of the Goths of Theodoric?

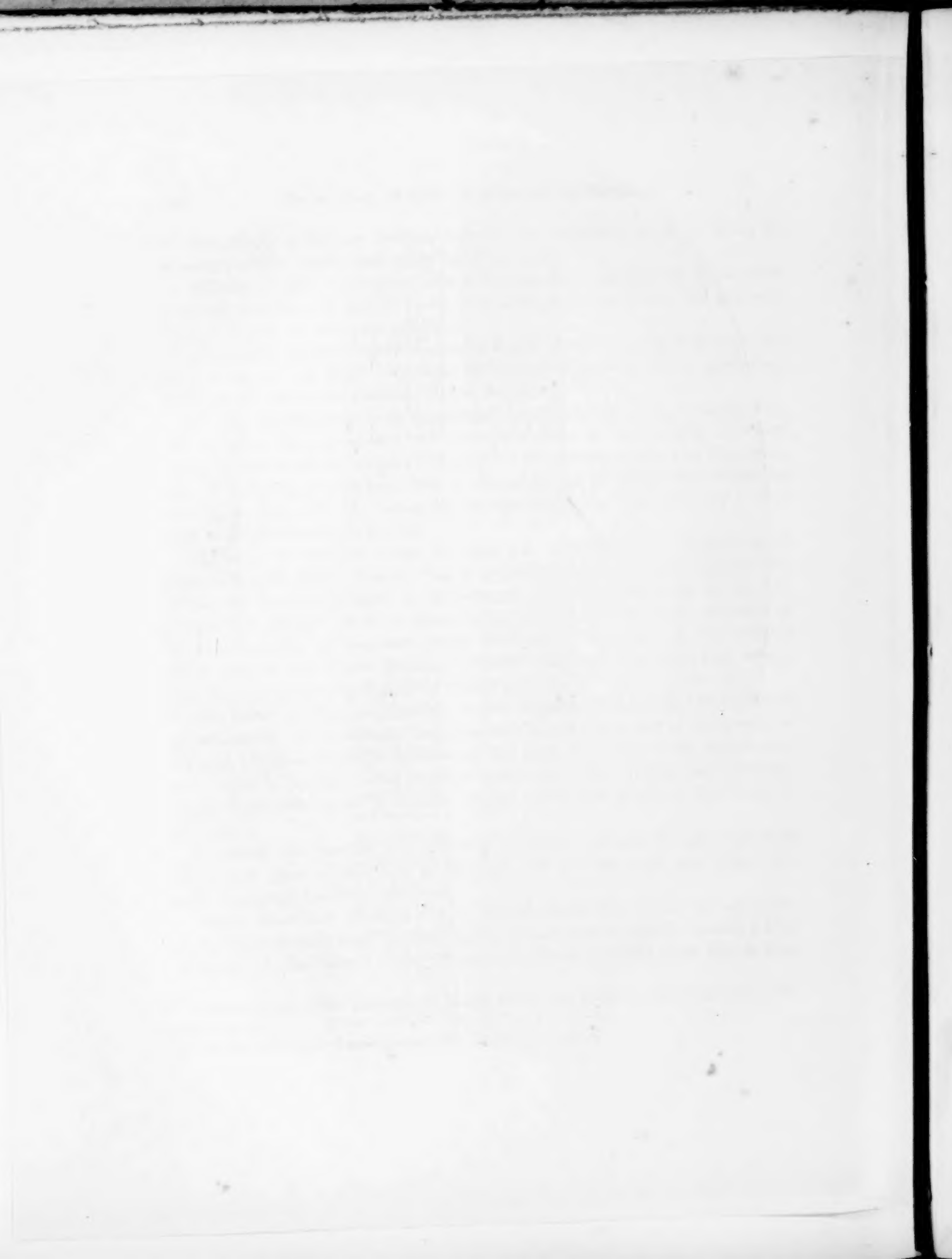
To decide the question, it is necessary to record not only the principal facts which took place at that time in Ravenna, but also the exact spot where this most interesting discovery was made.

We all know that Ravenna was, in ancient times, situated on the sea-shore, being only separated from the open sea by several lines of islands forming a kind of lagoon. In the course of time, the channels which separated these islands from

^a See an account of this mausoleum by Sydney Smirke, Esq. F.S.A. in *Archæologia* xxiii. p. 323, plates xxix. xxx.

^b A title which Sismondi denies to him.







JEWELLED ORNAMENTS RAVENNA.

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W. GREGG, PHOTO LITH. LONDON. S. E.

each other were filled up by a succession of alluvial deposits, and soldered (if we may use that term) to the mainland, in such a manner that Ravenna is now, relatively speaking, far from the sea, and communicates with it but by tiny canals. The most important among them is known by the name of *navilio grande*. Some twenty or thirty years ago, works most urgently needed were undertaken to improve it, and it was in the course of those works that the several pieces which make the subject of the present memoir were discovered in a large tomb, among many other sepultures.

It was very near the city, in the parish of San Eusebio, and not far from the Rotonda, in that part of the district which was formerly the eastern island, the highest land above the level of the sea, and therefore the best fitted for a burial-place. Many human bones were found lying on the soil; then appeared several tombs in stone or brick, generally of ordinary structure and without cement; and finally, at the further part of the cemetery, a larger and more carefully executed tomb, more than six feet long, well built in regular bricks with cement.

That place was certainly not one in which dead bodies could have been hastily and promiscuously buried after a battle. By its situation and the numerous tombs still remaining, it exhibits all the signs of an ordinary cemetery.

It is generally known that Odoacer, after having finally overthrown the Roman empire, obtained the title of Patrician and Exarch of Ravenna, and became the only real master of Italy when that unfortunate country was once more overrun by the whole nation of the Goths under the command of Theodoric. Odoacer resisted at first with great energy; but, after having fought several important battles, he was compelled to withdraw, with the last remains of his army, behind the walls of Ravenna, where he was soon besieged by Theodoric, who however, instead of immediate hostilities, proposed to his still powerful enemy to conclude an arrangement on the understanding that each should have a share in the supreme power. It was in the course of these negotiations that Odoacer, invited to a sumptuous banquet, was treacherously murdered, if not by the hand at least under the eyes of Theodoric. Odoacer, it is said, was secretly buried, and the crime concealed as long as possible. Such being the circumstances, two or three questions may be raised.

First, Odoacer in repairing trustfully to a banquet to which he had been invited by this same Theodoric, who offered to him a share of the supreme power, would scarcely have gone there in full armour, with his helmet and cuirass, instead of wearing some gorgeous costume, all covered with embroideries and jewels such as those princes used to wear?

After the murder, is it probable that the wretched people who had the charge of secretly burying Odoacer would have been particular and respectful enough not to strip their dead enemy of his richest ornaments?

In short, is it probable that the unfortunate prince, whose death was to be kept secret, was thus buried in an ordinary cemetery, and in a well-built tomb prepared beforehand to receive his body?

These objections are perhaps not strong enough to invalidate the conjectures of Signor Zabberoni, but they seem to me to be sufficient to give rise at least to some doubts.

If not of Odoacer, that sepulture did certainly contain the mortal remains of some eminent chief of the Goths, of some lieutenant of Theodoric, whose splendid monument, known under the name of the Rotonda, is to be seen in the neighbourhood. The perfect similitude of the ornaments with which both the cornice of that last monument and the double border of the curious jewels now kept in the Museo Classense are decorated, seem to make them appear as the product of the same art and of the same civilisation.

Who may have been the real owner of these jewels, is, in my opinion, a secondary question. Their true importance resides in their perfect workmanship, delicacy, and admirable state of preservation. I do not think any other monument of the same art can be considered as superior to those under consideration. For that reason I have been induced to offer to the Society, as a matter of interesting research, a faithful reproduction of the ornaments.

IX.—*On two Manuscript Psalters in the Collection of William Bragge, Esq.*
F.S.A. By AUGUSTUS W. FRANKS, Esq., M.A., *Director.*

Read February 26th, 1874.

THE two Psalters which Mr. Bragge has been good enough to exhibit on this occasion, at my request, are good specimens of writing and of illumination, of the middle of the thirteenth century; but are particularly interesting from the curious entries in the calendars prefixed to them.

It was not unusual in the Middle Ages to make such entries in religious books, the object being generally to fix the dates of the deaths of members of the family, or of friends of the owner, or of benefactors in the case of the volume belonging to a religious house, so that their obits might be duly celebrated. In this way many curious dates and notices have been preserved, which are of use both to the historian and genealogist.*

I.—THE GUINES PSALTER.

This is a small folio volume, measuring ten inches by seven inches, and containing seventy-one leaves of vellum besides the fly-leaves. It is in an ancient binding of oak boards, covered with stamped leather, the patterns on which seem to belong to the first half of the sixteenth century. Six leaves, containing the calendar, are prefixed; then follow the Psalms, Canticles, Song of the Three Children, Benedictus, Magnificat, Nunc Dimittis, Athanasian Creed, and Litany.

Among the names of saints occurring in this Litany may be mentioned the following as not among the most common, and as indicating the *cultus* which prevailed in the district in which this calendar was composed: Saints Chorenstinus, Salvius, Guingalocus, Euurcius, Vuandregisilus, Austregisillus, Cuthbertus, Berta, and Austreberta. At the end of one of the columns the following names

* These manuscripts have since been sold with Mr. Bragge's collection. The Guines Psalter has been acquired by the British Museum, Add. MS. 30045. The Danish Psalter has been purchased by T. Shadford Walker, Esq. of Liverpool, who has kindly lent it to me for re-examination.

have been added in another hand: *Adrianus cum sociis*, *Eadmundus*, *Thomas Cantuariensis*.

The initial of every paragraph throughout the volume is an uncial letter, alternately red and blue; the initial of each psalm in gold on blue or pink grounds, and occasionally inclosing such devices as lions rampant, eagles displayed with one or two heads, wyverns, and fleurs-de-lis. Eight of the psalms have larger initials, richly illuminated: Psalm i. letter B, in the upper part David playing on the harp, while a youth is dancing before him and playing on hand-bells; in the lower part David and Goliath, the latter with a wyvern on his shield, and near him a staff to which his heaume is suspended; Psalms xxvii. xxxviii. lii. and lxviii. (as numbered in the Vulgate) various subjects alluding to the psalms in question; Psalm lxxx. David seated, playing on four bells with a hammer, which he holds in one hand, while in the other he holds a horn which he is blowing; on his lap a zitter, at his side a harp; Psalm xcvi. three priests singing, in front of them a book on a desk; Psalm cix. the Holy Trinity, represented by two seated figures, with the dove descending between them.

In the calendar the principal feasts are indicated by their being written in red or blue. Besides those ordinarily indicated as principal feasts we find the following: ^a Jan. 20, *Fabiani et Sebastiani mr'*; 22, *Vincentii mr'*. March 12, *Gregorii pape*; 23, *Aadam creatus est*. July 4, *Ordinacio et translacio Sancti Martyni*. August 10, *Passio Sancti Laurentii*; 28, *Augustinus episcopus*. October 9, *Dyonisii cum sociis*. November 11, *Martyni episcopi*; 13, *Brietii episcopi*; 18, *Oct' Sancti Martyni*; 23, *Clementis pape*; 25, *Catherine virginis*. December 6, *Nicholai episcopi*; 29, *Thome prothomartiris*; 31, *Syluestri pape*. The last entry but one shows that the book was not in England at the time of the Reformation.

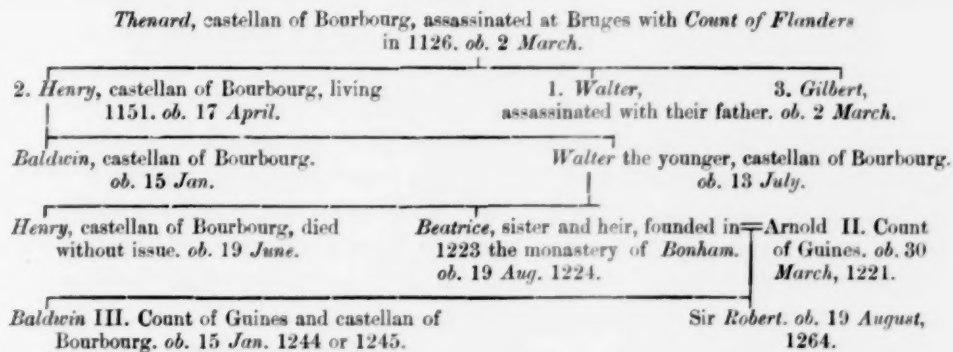
The following are the entries which have been added to the calendar:—

- January 15. O' Balduinus illustris castellanus de Bourboure.
O' Balduinus comes de Ghines castellanus de Brubo
- March 2. O' Karolus comes flandrie et Thenardus castellanus de Brobore
et Gillebertus et Walterus filii eius.
- March 9. M^{ccc} primo obiit frater Hellinus de Colonia.
- March 30. O' Arnulphus comes de Ghisnes et castellanus de Brobbore
M et cc et xxi.

^a The days of the month have throughout this communication been altered from the Roman Calendar into the corresponding modern notation.

- April 17. O' Henricus castellanus de Brobure.
 June 19. O' Henricus illustris castellanus de Brobure.
 July 13. O' Walterus Broburgensis castellanus.
 August 18. M^occc^or^o. O' pie memorie Margareta de Nieulande monialis
 beate Marie de Boneham.
 August 19. O' Beatris Contesse de Gissnes chastelene de Brobroc, M.cc. et
 xxiiii. O' Robertus miles filius comitis de Ghimes M.cc.lxiiii.

These entries are in various hands, but they chiefly relate to the chatelains of Bourbourg, near Boulogne, and to the Counts of Guines, who had married Beatrice, the heiress of that fief. The connection between the persons mentioned is best shown by the annexed pedigree, in which their names are indicated by italics :—



It is uncertain to which of the two Henries the obits of 17th April and 19th June apply; the latter died a youth, but, being nearer the time of the scribe who made these entries, he may have been designated as *illustris*. In a contemporary history of the house of Guines he is stated to have died about the feast of St. Michael, which is removed from both dates.^a

Of the other persons mentioned in the obits Frater Hellinus de Colonia may have been a priest attached to one of the foundations of the Guines or Bourbourg families, perhaps to Bonham, founded by Beatrice, Countess of Guines, in 1223. To this monastery was at any rate attached a nun, who died in the same year, and who must have taken her name from Nieulant, near Libure, where Arnold

^a André du Chesne, *Histoire généalogique des maisons de Guines, &c.*; preuves, p. 253, quoting Lambert d'Ardes.

de Guines, probably a younger son of Arnold II. and Beatrice, founded a monastery of Guillemites in 1261.^a

This psalter has been considered by some to be of English origin, but the numerous Flemish saints in the calendar, and the obits above recorded, many of which are as old as the manuscript, point to the execution as being Flemish.

II.—DANISH PSALTER.

This is a still more curious volume than the last; its contents are the same, and its date may be a little later. It is a small, thick manuscript on vellum, consisting of 239 leaves, measuring $6\frac{1}{2}$ by $4\frac{1}{4}$ inches. The binding is modern, and the margins have been much reduced. There is a large silver clasp, apparently of the seventeenth century, and somewhat Scandinavian in style. It is very well written, and richly illuminated. Prefixed to the psalter are eight leaves with page illuminations. Each of these pages is set in a square frame, with a lozenge in the centre; in seven cases the lozenges inclose angels; in the last may be seen Christ in Glory. From the sides of the lozenges proceed four ovals, inclosing subjects from the Life and Passion of Christ, on a burnished gold ground; in the intermediate spaces are half quatrefoils, containing a spread eagle and a lion alternately, excepting in the last leaf, where are angels with the emblems of the Passion. The backs of these leaves have been disfigured by lines for music being drawn across them very irregularly, and any blank leaves have been scribbled over with prayers.

The first word of the psalm forms a page illumination. Within the capital B are representations of David being crowned, and of David and Goliath. The initials of the verses are in blue, pink, and gold, and the spaces at the ends of the verses are filled with bands in colours and gold, terminating in scrolls. Some of the psalms have more elaborate initials. Psalm 27, an angel touching the eye of David, who is kneeling at an altar, on which is a cup. Psalm 38, God touching the mouth of David. Psalm 51, Satan appearing to David. Psalm 52, a fool standing before David and holding a staff with a bladder at one end. Psalm 68, Jonah issuing from the whale's mouth; above, God holding an orb. Psalm 80, David with two musicians, who are playing on fiddles. Psalm 97, a damsel holding up a square cymbal, and three other figures singing. Psalm 101, David praying to God. Psalm 109, the Holy Trinity.

^a Du Chesne p. 164.

Among the names of saints in the Litany at the end may be noticed SS. Oswaldus, Audoenus, Gutbertus, Dunstanus, Botulfus, Wilfridus, Etheldreda, Sexburga, and Wetburga.

The calendar prefixed to this volume consists of six leaves, the first four evidently written by the same scribe as the manuscript, the last two in a different hand and somewhat later; still they do not seem to have been taken out of another manuscript, as the same circular medallions occur in both, though in the last two leaves they are nearly obliterated. At any rate the pages must have been in their present position in 1613, as there are entries in the same hand in the two different portions of the calendar: under 6th June, and therefore in the original portion, is an entry "A° 1613. Nata fuit filia mea Ursula;" and on the 2nd October, in the restored portion, "Stadæ inauguratus sum."

In the calendar the principal feasts are indicated in gold. Besides the usual ones the following may be mentioned as so distinguished: March 7, Perpetue et Felicitatis; 21, Benedicti Abbatis. April 4, Ambrosii episcopi et confessoris; 14, Thibureii et Ualeriani; 23, Gregorii mr'; 28, Vitalis, mr'. May 25, Augustini episcopi et confessoris. June 17, Botulfi abbatis et confessoris; 25, Sancti Kanuti. July 13, Margarete uirginis; 22, Marie Magdalene. August 5, Golualdi regis et mr'; and in the restored pages, October 9, Dyonisii et sociorum eius; 25, Crispini et Crispiniani. November 11, Martini episcopi; 25, Katerine uirginis et martiris. December 6, Nycholai episcopi; 29, Thome martiris; 31, Siluestri pape.

It will be seen that on January 7 the feast of St. Canute has been erased. This was the day of the feast of St. Canute the younger, who died in 1131, and was canonised in 1169, and it is difficult to account for the erasure. Among the ordinary saints' days may be mentioned the following: March 20, Gutberti episcopi. April 19, Alfegi archiepiscopi. May 19, Dunstani archiepiscopi. June 22, Albani martiris; 23, Etheldride virginis. July 10, Septem fratrum. Felicis. Kanuti. The latter was killed in 1086 and had an anniversary at Lund on this day.

The earlier portion of the calendar has had a great number of obits entered upon it, most of which have been carefully erased. They have not, however, been all so completely destroyed as not to be susceptible of resuscitation, which by the kind assistance of Mr. Bond and Mr. E. M. Thompson, of the Manuscript Department in the British Museum, I have been enabled to do.

These entries, so far as they can be made out, are as follows, but there is sometimes an uncertainty as to the exact day to which an obit is intended to belong,

as the writer had to manage as well as he could, some of the lines being already filled with the names of saints.*

- January 7. ~~Canuti regis et m'ris~~ (erased). O' Enarus pater Petri prefecti.
 8. O' Philippus dux pie memorie norwegie.
 9. O' Birgerus dux sueorum.
 25. O' Ing.
 28. *O' Benedictus.
 31. O' Kanutus dux sueorum et dominus laurencius cum m[ultis aliis.]
- February 1. O' domina Estrid uxor domini Jacobi.
 10. O' Johannes filius domini Jacobj.
- March 21. O' ar^b
 25. O' . . ernus sym . . (?)
- April 7. *O' Ingerdis regina sueorum.
 14. O' Margareta filia ducis.
 28. O' Suerus rex norwegie.
- May 8. *O' Rikiza regina.
 17. O' Cecilia uxor Sunonis.
 18. O' Petrus Roskildensis episcopus nepos Petri pre[fecti]^c
 19. O' Jacobus filius
 22. O' Nicolaus.
 24. O' Margareta regina Danorum.
 25. O' Magnus filius ducis.
 28. O' Elisif mater Estridi[s].
- June 6. *A° 1613, Nata fuit filia mea Ursula.
 13. O' dominus Sugh.
- July 23. (Erasure.)
 26. (Erasure.)
 28. (Erasure.)
 30. (Erasure.)
- August 12. *O' Alexander.
- October 2. *Stadæ inauguratus sum.

* The entries to which an asterisk is prefixed have not been erased.

^b This was the anniversary of the death of the great Archbishop Absolon of Lund, in 1201; he was grandson of Schelmo, and therefore cousin-german of Suno. He left gifts to his relatives, and it is probable that his name has been here erased.

^c Bishop Peter's anniversary is given in the *Liber Daticus* of Lund as on the 20th of May. Langebek, iii. 519.

It will be at once seen that these entries refer almost entirely to Scandinavian personages, and many of them of eminence. Dr. Hans Hildebrand, of Stockholm, has been kind enough to look over the list and give me information concerning some of them, and I have consulted Langebek and Suhm's great work, *Scriptores Rerum Danicarum*.

Amongst the royal personages we have Philippus dux Norwegiæ, who is probably Filip Jarl, son of Birger dux Sueorum, whose obit is on the next day. He was killed in Norway, January 3, 1200. Birger II. "dux Sueorum," died October 21, 1266; therefore our entry must refer to Birger I. Brosa, who died in 1202.

January 31. This is the day of the battle of Lena, 1208, where Swerker II. King of Sweden, was defeated by his successor Eric II. It is stated that Laurence, son of Suno, and his brother Ebbo, father of Benedicta, second Queen of Swerker, were killed in the battle, but no Knut is noticed. This Canutus may have been Knut Jarl, son of Birger above mentioned, and brother-in-law of King Eric.

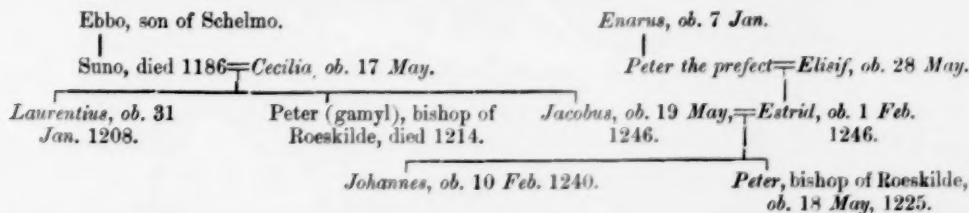
April 7. Ingerdis was the first Queen of Swerker II. She gave birth to a son, afterwards King John of Sweden, in 1201, and died before 1208.

April 28 was the day of the death of Magnus, King of Norway, in 1069. Suerus may be intended for Swerri, King of Norway, but he died March 9, 1202.^a

May 8. Queen Rikiza was the wife of the above-mentioned Eric II. of Sweden, and daughter of Waldemar I. King of Denmark.

May 24. Margaret or Dagmar, of Bohemia, first Queen of Waldemar II. King of Denmark; she died May 24, 1212.

Such of the less notable persons as can be identified seem all to belong to one family, the relationships of which are shown in the annexed pedigree:^b—



^a Langebek, ii. 507.

^b The persons mentioned are in italics. A much more extensive pedigree of this family may be found in Langebek, tom. iv. p. 345, tab. iv. Suno had several other children, among them Andreas, Archbishop of Lund, Ebbo, killed at the battle of Lena, and a countess Ingerdis; perhaps the last of these was commemorated Jan. 25

Jacobus, son of Suno, grandson of Schelmo *Candidus* or Hwit, seems to have become a monk at Hamburg, where he is entered in the *Necrologium*^a under May 19: "[Obitus] Jacobi de Mone, fratris nostri, et Petri filii ejus Seladonensis episcopi, pro cujus memoria decanus Bertoldus instituit dari canonicis sex denarios, vicariis tres, de terra de Gorrieswerdes." This Jacobus is conjectured by Langebek to have been prefectus Meoniæ, and seems to have given Dean Bertold of Hamburg money to provide books for the church there. In the same necrology his son John is mentioned under the 10th February, as in our manuscript.

There were, it will be seen, two bishops Peter of this family. Peter, the elder (*gamytl*), was bishop of Roeskilde from 1191 or 1192 to 1214, when he died on the 29th October (crastino Symonis et Jude). He was a person of considerable distinction, being chancellor of Denmark. Peter, the younger, was his nephew, and was bishop of Roeskilde from 1215 to 1225. He went on a pilgrimage to the Holy Land, but died at Dam in the Low Countries, and was buried in an abbey near Bruges. He is described as grandson of Peter the prefect, who must have been his maternal grandfather. One Peter was prefect of Lund or Scania in 1201.^b Enarus, father of Peter the prefect, may be the same person as Enar Rufus, a benefactor to the church of Lund, whose anniversary was held in that church on the 6th of January.^c Margaret and Magnus, children of a *dux*, may be connected with Birger dux Sueorum. The name *Sugh* reads quite plainly; it is probably a mistake for *Stigh*, the name of a nephew of Suno.

The obits connect themselves principally with Jacob, son of Suno, the date of whose death seems to be the most recent. It is possible that the manuscript may have passed after his death to the church of Hamburg, which would account for its being in the seventeenth century in the possession of a person connected with Stade on the Elbe. Why, however, the erasures were so carefully made it is not easy to conjecture.

The illuminations in this manuscript are elaborate, but exhibit some feebleness in drawing; they are in some respects not unlike the Flemish work of the period, but the colouring is most peculiar for the warmth of several of the tones. May this not be a specimen of Danish illumination? Unfortunately there do not appear to exist in the libraries of Scandinavia any means of comparison.

^a Langebek, v. 399.

^b Steenstrup, *Studier over Kong Valdemars Jordebog*, p. 45.

^c Langebek, iii. 434.

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X.—*On the Fate of Henry Brooke, tenth Lord Cobham.*

By JOHN GREEN WALLER, *Esq.*

Read December 6, 1877.

THE baronial family of Cobham took its name from the pretty village in Kent, four miles from Gravesend on the one side, and about the same distance from Rochester on the other. As early as the twelfth century it was of importance, but from the thirteenth to the sixteenth century it was one of the most powerful in the south of England. There were several off-shoots from the main stem, distinguished by the following manorial titles, viz. Roundal, Beluncle, Blackburgh, Chafford, Gatewayke, and Sterborough. There were four baronies by writ, viz. Cobham of Cobham, Roundal, Chafford, and Sterborough. The most important offices in the county of Kent were constantly in their hands, including the Wardenship of the Cinque Ports and that of Constable of Rochester Castle. The first Baron de Cobham, named Henry, was summoned to Parliament in 1313: no other of the name appears in the main stem until he whose fate I am about to consider. Of the off-shoots the most considerable was that of Sterborough in Surrey: Sir Reginald, the first baron, being the most eminent of the Cobham family. A hero of Crecy and Poitiers, one of the few brilliant warriors enrolled among the early Knights of the Garter, we must refer to the pages of Froissart if we would acquaint ourselves with the details of his career in the field, and in the councils of Edward III.

Returning, however, to the main stem, which more concerns our present inquiry, we find a contemporary of Sir Reginald, and his relative, scarcely less eminent. This was John de Cobham, third baron of that name, often distinguished locally as the "founder," because, in 1362, he founded a college of priests at Cobham, remains of which buildings yet exist in an ancient hall and some almshouses. He was without doubt one of the most influential barons of his time, and we find him associated with the Earls of Arundel, Warwick, and others in opposing the reckless courses of Richard II.

He married Margaret Courtenay, the daughter of Hugh, Earl of Devonshire, and by her had one child, a daughter, whose name was Joan. She was married to Sir John de la Pole, died in or before 1388-9, during the lifetime of her father, and lies buried in Chrishall Church, Essex, where still remains a monumental brass to the memory of herself and husband. She also left an only child and daughter, born about 1370, called, after herself, Joan, and this child became heir to the great Cobham barony. Her career must have been remarkable, at least in one sense, as she became the wife of five husbands. The first was Sir Robert Hemenhale of the county of Norfolk, and she must have been a youthful bride, as, when her husband died in 1391, she was still under age. Her second husband was Sir Reginald Braybrook, of a well-known family in the fourteenth century. If she was his wife, as I believe, as early as 1394, she could then have been but twenty-three years old. She bore him three children, two sons, named Robert and Reginald, evidently after her two husbands,^a both of whom died in infancy, and one daughter, again named Joan, and who, as we shall see, conveyed in her person the Cobham barony to the house of Brooke. Sir Reginald died at Middleburgh in Flanders on September 20, 1405, and the great heiress, doubtless besieged by suitors, was not allowed long to wear the habiliments of woe. Her next husband was Sir Nicholas Hawberk, probably a mere soldier of fortune: a man of knightly prowess, which he displayed in a tournament in Smithfield in 1393. By him she had one son named John, who died an infant, and her married life with Sir Nicholas was early brought to an end by his decease at Cowling Castle, Oct. 9, 1407. Scarcely three months later, viz. January 1407-8, her grandfather, John, the aged Lord of Cobham, died, and thus the thrice-widowed lady became in her own right the Baroness of Cobham.

Nor could she again long have worn the "customary suits of solemn black," for, two years later, her next and fourth husband, the celebrated Sir John Oldcastle, was summoned to Parliament, *jure uxoris*, on the 26th Oct. 1409, and, in the following year, an indenture was made by him and Lady Joan on the one part, and by Sir Thomas Brooke of Somersetshire on the other, to marry her daughter Joan to Thomas, son of the latter, before the feast of Pentecost next ensuing. The terrible tragedy enacted in front of St. Giles's Hospital on Christmas Day, 1417, closed the life of this Lord of Cobham; and his story has been told with all the venom of bigoted malice. A cloud now rested over the Cobham barony, and I am unable to say at what time Lady Joan took to herself her last

^a Possibly Robert was called after Robert Braybrook, Bishop of London.

and fifth husband, Sir John Harpeden. He was of good knightly family, connected in descent with that of Mortimer, and also with the Cobhams of Sterborough. He survived her five years, dying in 1438, and was buried in Westminster Abbey, where, in the north ambulatory of the choir, yet remains a monumental brass to his memory.^a The inscription is lost, but four shields of arms display his descent and alliance; the last coat, his own, being modestly placed on the sinister side.

Lady Joan died on the feast of St. Hilary the Bishop, Jan. 13th, 1433-4. Her monumental brass in Cobham church is placed between those of her second and third husbands, Sir Reginald Braybrook and Sir Nicholas Hawberk. Together they may rank amongst the most beautiful brasses of English workmanship. Her own is remarkable for its elegant simplicity; it represents her in widow's costume, with a numerous family of ten children, six sons and four daughters, grouped at her feet: six escutcheons of arms, of most instructive heraldry, show her descent, her alliance with Sir Reginald, and that of her daughter and heir to the son of Sir Thomas Brooke, and the inscription at her feet merely tells us that she was Lady of Cobham and the wife of Sir Reginald Braybrook.

Sir John Harpeden was never summoned to Parliament, nor indeed was Sir Thomas Brooke, who married the heiress of Cobham. A large family of fourteen was the offspring of this union, and his son Edward and grandson John became successively Lords of Cobham and were staunch adherents of the house of York. The date of the latter's decease has been so misconceived and has led to so much error, that it may be well here, at once and for all, to determine that question. His brass in Cobham chancel commemorates as well his second wife, Margaret Nevil, daughter of Lord Abergavenny, who died Sept. 30, 1506: but the date of his decease is left blank, a very common circumstance, showing that the monument was erected during his life and that the date was never filled in. Strange to say, the date of his wife's death has been applied to him, and Sir Harris Nicolas, in his *Synopsis of the Peerage*, has not only adopted this error without inquiry, but, still worse, has made it the basis of a great blunder. Finding Sir John still summoned to Parliament after 1506, he assumes that for years the king's writs were issued to his son Thomas in his name.^b Had he only thought it worth while to have consulted the *Inquisitiones Post Mortem*, he would have discovered that Sir John died March 9th, 1511-12.

^a The date of his death is usually given as 1457, but it is proved by an inquisition to have taken place 8 May, 1438.

^b On one occasion a mistake was made, as in the summons of 12 Nov. 7 Hen. VIII. 1515.

The next of the Cobham Barons who commands particular attention was the grandson of the above, George Brooke, whose splendid monument in Cobham chancel is the last memorial to a Lord of Cobham; his numerous family of ten sons and four daughters are represented kneeling around it, in all the blaze of heraldic pomp.^a It is his grandson Henry to whose fate I now propose to direct your attention, and in whom the ancient barony, by writ, became extinguished.

It has gone forth to the world, and, as yet, is part of our domestic history, that Henry Brooke, tenth Lord Cobham, attainted of treason 1^o James I., after lying many years in the Tower, was permitted to walk out, and died in extreme misery and want, in a wretched hovel in the Minories, in 1619. That such a story should find its way into the Romance of the Peerage is natural enough, and that the author should cling to it may be well understood. But that it should be reproduced by an acute lawyer, a magistrate, whose office and whose education would lead him to examine into facts and to sift evidence, in a work professedly, from its nature, critical, without any comment, as in Jardine's *Criminal Trials* (i. 477), is certainly remarkable as showing the persistency of error. For, granting that he had no evidence to the contrary, the circumstances are strange and unusual, and warrant suspicion as to their truth, even if they do not positively command us to inquire into the evidence by which they are supported.

The story has been repeated again and again. It occurs in the histories of Kent, Prince's *Worthies of Devon* (art. Raleigh), Aikins' *Life of James*, &c. but it owes its origin to two writers, Francis Osborne and Sir Anthony Weldon.

The first, in a book entitled "*Historical Memoirs of the Reign of Queen Elizabeth and King James I.* Lond. 8°, 1658" (p. 11), relates it in these rambling words. Speaking of James, he says: "At his assumption to the throne, the Lord Gray, Lord Cobham, and Sir Walter Raleigh (professed enemies to the late Earl of Essex, and no weak instruments in his destruction), fell into a treason of a like depth with his; and so improbable to hurt others, or benefit themselves, that if ever folly was capable of the title, or pity due to innocence, theirs might claim so large share as not possible to be too severely condemned, or slightly enough punished. Yet, as shallow as it was, the Lord Gray could never wade through it, but died in the Tower, though Cobham did, but to such a liberty as only afforded him the choyce of a place to starve in, all his land being formerly confiscated and begg'd: so, as myself heard William Earl of Pembroke relate

^a I have given fuller accounts of the earlier barons and their tombs in memoirs printed in the *Archæologia Cantiana*, xi. 49; xii. 113.

with much regret towards him (though in his life his opposer, in exasperating the old Queen against him in relation to a juvenile lapse, for which he was by her committed to the Fleet), that he dyed in a roome, ascended by a ladder, at a poore woman's house in the Minories, formerly his landeresse, rather of hunger than any more naturall disease. Thus miserable was his fate, in meeting with a prince so inconsiderately profuse to strangers that he forgot the owner, not leaving him wherewithal to buy bread; an impiety not found amongst Infidels, who ever deemed it less injustice to take away life then the meanes to maintaine it."

Sir Anthony Weldon, in his *Court and Character of King James*, Lond. 12^o, 1650 (p. 38), states the fact with a more bitter feeling; he says, "his death as base, for he dyed lousie for want of apparell and linnen: and had starved, had not a trencher-scraper, some time his servant in Court, releevd him with scraps, in whose house he dyed, being so poore a house as he was forced to creep up a ladder into a little hole to his chamber; which was a strange judgement and unpresidented, that a man of 7,000*l.* per annum, and of a personall estate of 30,000*l.*, of all which the King was cheated of what should have escheated to him, that he could not give him any maintenance, as in all cases the King doth, unlesse out of his owne revenue of the Crowne, which was the occasion of this Lord's want: his wife being very rich, would not give him the crums that fell from her table; and this was a just judgement of God on him."

Of what value are the statements of this ribald monger of court scandal, who speaks so glibly of the "just judgments of God," I shall presently show, and it is unnecessary to call your attention to the discrepancy in these two versions. Only one writer of the same period has questioned its truth, viz. Godfrey Goodman, Bishop of Gloucester, who, in his "*Court of King James*" (ed. Brewer, 1839, i. 69), says, "that Cobham should live and die so miserably as is related, and that his wife should be so unnatural as not to relieve him 'with the crumbs that fell from her table,' and that the King should be cheated of all his estate, these things are not credible." The author of the *Romance of the Peerage* quotes this writer only to discredit him, calling him "easy Bishop Goodman;" perhaps the term may apply more correctly to himself.

To the testimony of such writers as Osborne and Weldon no weight attaches; the first only speaks of his narrative as "traditional," and, although the latter calls himself an "eye and eare witnesse" of what he relates, he gives no corroborative evidence; in fact, neither authors have any other value than as stating their own personal views on the events of the time. Both were inimical to

James. Moreover, as regards the question of Lord Cobham's fate, it must be remembered that a whole generation had passed away; even members of the Brooke family, then living, could know little but what was traditional concerning one dead thirty years before, and who, previously to that, had been upwards of fifteen years dead to the outer world. In fact, a prisoner of state is exactly in the position of one about whom almost any story might get afloat. Cut off from communion with the world, he lives, but is not of it, and is soon forgotten even by his friends. If after his death a tale is told of him, few can test the truth of it, and those that can care not for the trouble; it then passes current, and becomes history.

In opposition to this story, I shall prove, that Lord Cobham had an ample allowance as prisoner in the Tower; that six months before his death he was in the Tower seriously ill, probably paralysed; and that the King was not cheated of what accrued to him from the attainder. The probability is that he died in the Tower, it being so stated in a pedigree attached to the abstract of the title to some portion of the estates, which were conveyed by Sir John Brooke (created Lord Cobham by patent in 1645, and who died in 1659) to the Duke of Lennox and Richmond,^a and a legal document of the character alluded to must be held conclusive. The traditional story of Osborne and Weldon is indeed of later date, as the above-named transaction must have taken place some years before either work was published. But, before I enter more minutely into the matter, it is necessary to give a brief sketch of Lord Cobham's career.

Henry Brooke was the second son of Sir William Brooke, ninth Lord Cobham, and, Maximilian the eldest having died young, he succeeded to the barony on the death of his father in 1596-7, being then thirty-two years old. No one could have entered life with more brilliant prospects. In his blood were represented many noble and historic names. The vast estates of the family had been constantly on the increase, and an addition was made to them by Queen Elizabeth in 1564 of St. Augustine's Abbey at Canterbury. At her court, indeed, the lords of Cobham were in high favour, and she had honoured his father, Sir William, on two occasions with a visit to Cobham Hall, where she was entertained with much magnificence. Without any great ability and still less personal character, he nevertheless fell in naturally, as it were, to those honours, which his ancestors had so often enjoyed. In 1597 he was made Lord Warden of the Cinque Ports, an office of more importance in those days, and one which even now is generally reserved for those who have done great service to the state. He was installed

^a In the possession of F. C. Brooke, Esq.

on St. Bartholomew's Day (1598) at Canterbury, "at which ceremonious solemnities were assembled almost 4,000 horse, and he kept the feast very magnificently, and spent 26 oxen, with all other provision sutable."^a The following year he was installed Knight of the Garter, as his father and grandfather before him; and here his honours and good luck seem to have culminated. So great a favourite of fortune, and yet in his prime of youthful manhood, it will not be a matter of wonder that the ladies of the court considered him as a matrimonial prize, and that the young lord of Cobham was the subject of much speculation. The prize fell to Frances, daughter of the Earl of Nottingham, and widow of Henry, Earl of Kildare. She was a warm-hearted woman, but of strong passions and of a violent temper, yet there is no doubt that she had conceived for Lord Cobham a powerful affection.^b Although the marriage was spoken of as early as 1599,^c it did not take place until 1601, though the contract was made before the Queen in February, 1600.^d It does not appear to have been one of good omen, for it is thus alluded to in a letter of the time: "The Lord Cobham hath married the lady of Kildare, but I hear of no great agreement."^e It was not a happy marriage, but the union was destined to be soon abruptly dissolved.

In this age of Court intrigue and political plotting, Lord Cobham and Sir Walter Raleigh (who had been his father's friend) took the same side. They were both the enemies of the unfortunate Earl of Essex. At the attack upon Essex House in 1601 Lord Cobham took part, and afterwards sat as one of his peers on the trial, little thinking then how soon his own turn was to come. It is extremely probable that this enmity to Essex was the shadow cast before, a warning of the event fatal to himself. Between Essex and James of Scotland a warm friendship subsisted, and when the latter ascended the throne of England the enemies of that nobleman soon felt his displeasure. Sir Robert Cecil, however, brother-in-law of Lord Cobham, had adroitly made his peace with the new sovereign, an incident eminently characteristic of this crafty statesman. Osborne, whose sympathies are evidently with Sir Walter Raleigh, states that he, Lord Cobham, Sir John Fortescue, and others, were for having articles drawn up in respect to the new monarch, and this of itself, if true, would be quite sufficient to influence the King against them.

James was no sooner upon the throne than there arose those plots against

^a Letters written by John Chamberlain. Camden Society, 1861, p. 18.

^b Secret Correspondence of Sir Robert Cecil. Edinb. 1766, p. 89.

^c Letters written by John Chamberlain, p. 40.

^d *Ibid.* p. 65.

^e *Ibid.* p. 109.

him which is comprehend or unravel is one of the most difficult tasks in English history. In the phraseology of the time, they were known as the Treasons of the Bye and the Main—the Priests' Treason (or the Surprising Treason), and the Spanish Treason. It was the Treason of the Main, or Spanish Treason, in which Lord Cobham and Sir Walter Raleigh are said to have plotted, and, if we are to believe his accusers, the latter was the soul of the conspiracy. What was the Spanish Treason? Rushworth, writing fifty years afterwards, tells us "it was a dark kind of treason, and that in his time the veil still rested upon it." We may safely come to a similar conclusion; it is so dark an affair that, after two centuries of light, we grope our way hopelessly. What is, however, but too clear, is the strong party passion of men who hesitated at nothing that could prostrate a political foe, and also the unhappy fate of the actors in these so-called conspiracies. My own study of the question leads me to the conclusion that there is no evidence which would bear cross-examination, and I am inclined to say, as Dr. Lingard does, of the Priests' Treason, "that the absurdity of this scheme is its own refutation." I feel myself happy, however, that these much-debated questions do not require any discussion on my part, as they are not material to the subject into which I am about to enter. It is sufficient for us to know the fate of those engaged, and we will assume their guilt, that our argument may not be mixed up with that question.

The Priests' Treason, so called from two Catholic priests, Watson and Clarke, said to have been its promoters, was to surprise the person of the King. In this George Brooke, Lord Cobham's brother, Sir Griffin Markham, and Lord Grey of Wilton, were joint actors, and Lord Cobham was said to be privy to it. As before mentioned, Cobham and Raleigh were the actors in the conspiracy of the Main or Spanish Treason. These unfortunate men were tried and found guilty, and Raleigh's trial, from the eminence of his character, and also from the able defence which he made, has excited mostly the attention of English historians. We cannot rise from its perusal without a sentiment of disgust, and a feeling that it remains a blot upon our history.

The two priests suffered the extremity of the law, with all its attendant barbarities; George Brooke was beheaded at Winchester; and Lords Cobham and Grey and Sir Griffin Markham were one cold morning in November, 1603, brought upon the scaffold at Winchester Castle, Sir Walter Raleigh looking on from the window of his prison; and after being severally played with, as the pike when hooked by the angler, with the bitterness of death before their eyes, received the commutation of their sentence. Those who have read James's letter to the

Council, wherein he glorifies himself on his royal mercy, and have also read the narrative of an eye-witness^a of the scene enacted upon the scaffold, will understand and appreciate his character.

We have now to state their fate. Sir Griffin Markham was banished the realm, and died abroad. The young Lord Grey of Wilton, he who could have met his death as a bridegroom would meet his bride, died after eleven years' confinement in the Tower, his high spirit utterly crushed. Sir Walter Raleigh's fate is well known. Posterity will ever regard his execution as a crime. The fate of Lord Cobham then is the question in debate, and alone remains to be settled.

He and Sir Walter Raleigh were conducted back to the Tower, December 16, 1603,^b and henceforth Lord Cobham, like most of the unfortunate men condemned to imprisonment for life, became as one dead to the outer world. Let us withdraw the veil a little and see what went on in his prison.

At first he, and his friends without, entertained a hope of his freedom. In some letters, which he addressed to his brother-in-law Cecil, we find him importuning, though somewhat faintly, for his assistance in this matter.

To divert his mind from the sad prospect of a life-long imprisonment he set himself to the translation of Seneca's treatises, *De Providentia*, *De Ira*, *De Tranquillitate*, *De Vita Beata*, and *De Paupertate*. It is probable that he may have had some taste for classical study, for there is a letter written by him to Sir Robert Cotton, 12th January, 1602-3,^c asking for the loan of "my lord Essex notations of Cornelius Tacitus." One of these translations, *De Providentia*, is extant, and now in the possession of Francis Capper Brooke, Esq. of Ufford, Suffolk. It is a small volume, measuring rather over five inches in length by three in width, bound in blue velvet, now much faded, and written in a remarkably neat, precise, and legible hand, most likely by a professional scribe.

This translation (as were the others also) is dedicated to Cecil, thus:

To my very good Lord and brother in law the Lo: viscount Crambourne his Ma^{tie}
principall Secretarie.

This booke de prouidentia amongst others of Senecas works I made choice to translate. I confess in my life, except the scripture, I neuer read any thing that so fealingly, and so rightly moued me, truly to consider the uanity of this world; this great comefort in reading of it I have found y^t my thoughts being distracted, and many times forgetting reson (that I haue had cause is not unknowne) this booke hath settled my opinion, made mee see the weaknes and frailty of my thoughts, giuing me this comfort y^t where God loues he chastiseth; the Author was a heathen, and

^a *Archæologia*, XXI. 170.

^b See *Proc. Soc. Ant.* 2d S. i. 62.

^c Cott. MS. Vesp. F. xiii. f. 285.

in reuerence of God to him unknowne, whom we Christians truly and sincerely know, attributed all happines to y^e true worshiping of him; how nere he comes to true divinity y^e work itself expresseth. My Lo: Keeper Bacon was a great reader of Seneca, and this booke de prouidentia he most oftneft did read, his course of life shewed y^t he imprinted the subiect of it in his minde, whose memorie in this kingdom will neuer be forgotten, for in former times to his end there was never any more worthy: I haue translated it to pass my time withall, as y^e best comfort I could giue myself. To your Lo: I present it, not as a booke dedicatory, but as y^t I presume will please you, in that I being uoide of comfort can comfort my minde in learning to forsake that which hath forsaken mee, others by discourse, I out of profe know y^t this world with y^e vanities thereof is but transitory, and God whome we most neglect doth only aid us, and to winn us he doth punish us, thereby we are taught merely to follow him, for uaine is y^e help of man.

From my hart I wish your Lo: all hapines, and so I wish that somtime you will thinck of mee yo^r pore frinde and free mee if it may be.

Your Lo: very louing

brother in lawe

[1604 or 1605.]

HENRY COBHAM.

In a letter docketed July 24, 1605,^a he sends other of the treatises translated, and writes much in a similar strain. "I know it will content you (he says) y^t now in my misfortune I spend not my tyme frutleas, but pas it away in comforting my mynd," and alludes to his hope of liberty; "my libertie I recomēd to y^r Los: I am bound vnto you for y^r favour in y^t you wish it and y^t you will giu me your best furtherans;" and he ends, "I will pray to God to hasten y^t tyme and encourag you to undertak so charitable a dead to healp a powr man out of prison.

"Y^r Lo. brother in lawe

"humbly to comaund

"H. BROOKE."

Thus then did he pass away the early days of his imprisonment; let us now see as to its nature. This we get out of a letter from Sir William Waade, the newly-appointed Lieutenant of the Tower, with whom Lord Cobham seems frequently to have quarrelled, and to have got himself into disgrace.^b This, however, most likely occurred with nearly all the prisoners.

The letter, dated August 19, 1605, is addressed to Cecil now Earl of Salisbury, and says,^c "The Lo: Cobham hath one servant more than is allowed in the warrant.

^a Lansdowne MSS. 89, No. 46.

^b See a letter from Sir William Waade, August 17, 1605. Addit. MSS. 6178, f. 449.

^c Excerpts from Burghley papers, Addit. MSS. 6178, f. 433.

"For access it is open and there come ordinarily unto him many of all sorts not warranted by any l^{rs} I have seene.

"For libertie the dore of the prison where he is, towards the leads, is not shut all the day, nor the dore at the other end of the leads by which any may have access unto him. Besides, there is another dore upon the leades thorow the lodgings of the Lieutenant lately made, w^{ch} stood open, by w^{ich} by a private staires many came and wente until it was observed.

"The prison dore to the leades I leave open the day-time, one of the other two dores out of the leades I have caused to be shut up, and the other I leave open, but appoint one to watch there. There is another dore at the end of a paire of staires, to the hill-wards, which is at times opened for bringing of victuals, and other necessary occasions for him," &c.

By this we see Lord Cobham's treatment was not that of a Bastille, it was not strict nor close confinement, and he was attended by his servants like a gentleman. I shall now show that he had an ample allowance for his maintenance out of the Treasury.

In Mr. F. C. Brooke's collection is a series of letters, written by Lord Cobham from the Tower, to the Lord Treasurer for the time being, with one or two exceptions. All these letters have one purpose, and are couched in the same language. The earlier ones^a are addressed to Lord Salisbury, but no longer make any reference to cherished hopes of liberty. Time has reconciled or convinced him of the hopeless condition in which he is placed. They are formal applications for his quarterly and monthly allowances, the first being 25*l.* the last 32*l.* making 516*l.* per annum. The following is a sample :

May It pleas y^r l^{rs}:

This 13 of Junne my monthly allowens, being 32 p., is now deau vnto me. I humbly pray y^r l^{rs}: to tak order y^t it may be payed, and y^t this berer Thomas Morgayn my seruant may receaue it, and so I humbly tak my leau. From y^e Toure 13 of Junn 1609.

Y^r l^{rs}: brother in lawe

humbly to commaund

HEN. BROOKE.

He has now, it will be seen, relinquished the name of Cobham, that of the barony, and it is plain Henry Brooke until after Salisbury's death ; for this there

^a There may be earlier letters than those preserved in this collection. I speak only of those I have seen.

was probably a reason, for to the new Lord Treasurer, the Duke of Suffolk, he renews his signature as Lord Cobham, and so after to his death. In 1615 the handwriting of these letters is much deteriorated, the neat hand is now slovenly, but on 28th August, 1616, his signature is remarkable for the unintelligible manner in which "Henry" is written, and he was probably ill. Let me here remind you that he had now been twelve years a prisoner. The succeeding letters improve, but some are evidently not written by himself. On the 5th of May, 1618, are two letters, one as usual to the Lord Treasurer, another, and a very important one in this inquiry, is endorsed—

To the right wo^{ll} my verie louinge freind S^r John Bingley, knight, Auditor of the Tellers of his Ma'ties receiptes.

I giue you hartie thanks for yo^r kindnes to me in helpinge me to my monthly allowance weh was due vnto me the 9th of March last past, for I vnderstoode you tooke yt vpp for me, I entreat yo^a to afforde me the like Curtesy and to lett me haue this monthes allowance, weh was due unto me the 4 of this present month of May, and what you shall thincke fitt I will allowe out of it. I pray helpe me to it at this time for I am into affence and haue not one penney in my purse to giue my physicōns their fees nor my selfe foode. So assuringe my selfe of y^{or} accustomed fauor herein, I committ yo^a to Gods holy protect'on.

Yo^r very louing Freind,

HENRY COBHAM.

Tower the 5th of May, 1618.

We see by this, as also by other letters, that Lord Cobham did not let time slip before he demanded his money, for it was only due the day before. Either this may argue a somewhat thriftless management, or that the exactions of the prison were heavy. We see, also, that poor Lord Cobham had to pay for the friendly services of the Worshipful Sir John Bingley, knight. But what is most important in this letter is the allusion to his physicians, as it shows him to be in ill health. The last letter that we know of his from the Tower is dated July 13, 1618. It is a demand as usual for his allowance: it is not written by him though signed, and this signature is all but unintelligible. There is an attempt at his old precision, but it is written with extreme difficulty, as by a paralysed hand.

Let us now go to the Records, and we find various entries in the Calendar of State Papers bearing upon and in corroboration of the above.

In 1616 there was a rumour of the probability of Lord Cobham's release as well as that of Sir Walter Raleigh. But it never came, though the next year Sir Walter went on his expedition to Guiana, which turned out so fatally for

him. He sailed from Plymouth, June 12th, 1617.^a Shortly after Lord Cobham "for the bettering of his healthe had his Majestie's leave to go to Bathe attended by his keeper. In his returne, being as he conceived throughlie cured of his maladie, was at Hungerford surprized with a dead palsey: frome thence with difficultie he was carried alyve unto Odiam, Sir Edward Moore's house; he is yett livinge but nott like to continew many dayes." This information we get from a gazette letter from George Lord Carew to Sir Thomas Roe.^b The event is placed under September 1617.

Sir Edward More had married Lord Cobham's sister Frances, twin with Elizabeth, who married Sir Robert Cecil, and widow of Lord Stourton. Here then we have a proof that he was not entirely deserted by friends, in itself sufficient to throw doubt upon the story of his miserable end.

From this attack Lord Cobham sufficiently recovered to be enabled to return to the Tower, as appears from the letter already alluded to, dated July 13th, 1618. In this month he petitioned the Council to move the King to allow him liberty to take the air for his health, Mr. Frederick, the King's surgeon, to certify his weak state.^c

Here we lose all trace of him as a living man. If he revived it was but a short respite, for he died January 24th, 1619, as appears by the following entry.^d

Lady) By order dated 25 January 1618 [1619 N.S.] To Elizabeth, Lady Brough, assignee
Brough) of Henry Brooke, late Lord Cobham, late prisoner in the Tower, deceased, as well the sum of 109*l.* upon his allowance of 8*l.* the week, for his maintenance, payable monthly, and due for 3 months, 1 week, and 5 days, of the number of 28 days to the month, begun the 21st of October, 1618, and ended 24th of the present January, 1618, on which day his Lordship died, as also the sum of 25*l.* upon his allowance of 100*l.* for apparel, physic, &c. payable quarterly, and due for the quarter ended at the feast of the Birth of our Lord God last past, 1618.

By writ, dated 25th January, 1608, and the last of July, 1618 . . . £134 0 0

It is clear from this document that money not spent by Lord Cobham of his ordinary allowance was returned to his assignee. This would seem to show that he was not at least within the verge of the Tower at the time of his death, and

^a Letters from Lord Carew to Sir Thomas Roe, Camden Society, 1860, p. 111.

^b *Ibid.* p. 122.

^c Calendar of State Papers (Domestic Series), 1618, p. 561.

^d Devon, Issues of the Exchequer, p. 224. Elizabeth, daughter and coheir of the 5th Lord Borough or Burgh, was widow of George Brooke. The writ of Jan. 25, 1608-9, sanctioned the allowance being paid to Lord Cobham's assignee for the time being.

therefore this may have given some colour to the fable that he died wretchedly in the Minories. But, as I have shown that he was seriously ill, the statement that he died of starvation and "not of natural disease" cannot for one moment stand any longer as a part of our history. Neither can that part of the tale remain, that he had no allowance from the Treasury.^a

Before Lord Cobham's death the Lieutenant of the Tower had seized to the King's use 1,000 volumes of books of all learning and languages, which had been the solace of his imprisonment, and which Sir Thomas Wilson proposed should be transferred to the King's library.^b Yet, strange to say, we are told that his body lay unburied for want of money; but the statement is made only four days after his decease.^c It also states he died a Papist. Of the Lady Kildare, his widow, nothing is said at this time. She was living at Cobham Hall, and it seems as if she took no notice whatever of the unfortunate man who was her husband and in whose house she lived. So far the part of the story which relates to her cannot be denied.

But I have not done yet with Osborne and Weldon, for none of their assertions are so unfortunate as that which maintains that the King was cheated of the estate. The will of George Lord Cobham, dated March 31st, 1552,^d made an elaborate settlement of the estates, entailing them on the next heir, with remainder in the usual manner. The King, therefore, by the law of the land, could only be entitled to a life interest in the Cobham domains. Possibly this consideration may have had much to do with the royal mercy. No sooner, therefore, did he become possessed than he immediately began to realize. And, for this purpose, he entered into a bargain of a cruel, even if of a legal character. Unfortunately the next heir was the son of George Brooke, who was executed at Winchester,—a poor friendless child, of tender age, unable to assert his own rights before the law, and deserted by those near to him in blood, whose duty it was to aid him.

The transaction to which I allude was entered into with Duke Brooke, the son of an uncle of Lord Cobham, and the next in succession, if George Brooke's children were debarred by attain of blood. This appears from the answer by the

^a See also Devon, *Issues of the Exchequer*, p. 34, for payments in 1606.

^b *Calendar of State Papers*, Nov. 2, 1618, p. 590.

^c *State Papers*, Dom. Jas. I. vol. 105, Letter from Sir Thomas Wynne to Sir D. Carleton, dated 28 Jan. 1618-19. "My Lord Cobham is dead and lyeth unburied as yeat for want of money; he died a papist."

^d Harl. Chart. 57. H. 7; perhaps a superseded will, for Dugdale (*Baronage*, ii. 282) gives the date of the will as Jan. 13, 1557-8.

King to the "Humble petition of Duke Brooke, of Temple Combe, Esq. and in consideration of £4,269 on the 4th of May, 1605, and £3,250 on the 8th of November, 1605, and £3,250 on the 4th of May, 1606, by the said Duke Brooke paid, we grant," &c. Then follows a recital of the manors, &c. making in all ninety-one items. So here we find the King, in two years after the attainder, is proceeding to realize on the estates seized.

The recipient did not live long in possession of the property thus acquired, but died without issue May 27th, 1606, only twenty-three days after the time fixed for his last payment. On the 25th of October, 1607, Charles Brooke, his brother, had a renewal of this grant by the King, but on what terms I do not find. Whilst the property was in his hands he parted with several manors to Cecil, then Earl of Salisbury, for £5,000, as well as to others. He died April 5th, 1610.

It is remarkable that the unfortunate prisoner was living out those who were enjoying and scattering his estates. But now comes another part of the story very pregnant with reflection: viz. the restoration in blood of the children of George Brooke, attainted. These were William, his son and heir, and two daughters, Frances and Elizabeth.^a This took place in 1610, between six and seven years after their father's execution, when they were therefore rising to the age of puberty. An express proviso was, however, made, that this did not enable them to enter into any of the property which was their father's, nor into that of Henry Lord Cobham; nor could William Brooke take the title of Lord of Cobham without the King's especial grace, and this was never accorded to him. It is not a matter for surprise, then, when some thirty years afterwards, in the great Civil War, we find Sir William Brooke fighting on the side of the Parliament, and meeting his death on the field of Newbury, 1643, or through wounds there received.

But it must surely be questionable if the King had the right to set aside the will of George Lord Cobham, for it is clearly shown by the instruments drawn up by the lawyers respecting the sale of property by John Brooke, created Lord Cobham by patent, to the Duke of Lenox and Richmond, that they considered the will and entail in force, notwithstanding the attainder, as it is constantly cited, and the death of all who could claim under it duly proved. It seems probable that James, with the connivance of Cecil, who bought some of the estates of Charles Brooke, used or abused the law, and threw such obstacles in the way of the rightful heir as rendered any process against the crown hopeless.

I have thus shown that every single allegation by Weldon and Osborne is

^a Statute 7 Jac. I. iv. pt. 2, p. 1155.

unfounded ; but there is one point yet in doubt and obscurity. Where was Lord Cobham buried ? At Cobham the registers do not carry us back so far. Those in the Tower have not his name ; he was therefore not buried there. Search has been made at Odiham without success, and at Aldgate also, as well as at Trinity, Minories, by the Tower, but no entry has been found.

In conclusion, I think we may fairly say that, although Henry Lord Cobham did not die in the miserable manner that has been stated, yet no one could more truly use those words which Dante puts into the mouth of Francesca of Rimini, "No greater grief than the remembrance of a happy time in misery."

"Nessun maggior dolore
Che ricordarsi del tempo felice
Nella miseria."

Dante, Inferno, Canto 5.

*Description of the fac-similes of the Autographs of George, William, and
Henry, Lords Cobham. (Plate VIII.)*

- No. 1. Signature of George Brooke, Lord Cobham, to an order of Privy Council to "deliver unto Polidorus Vergilius three hundreth crownes after v^s the crowne," dated at Westminster, 9 Nov. 1551.

All his signatures are precise and unvarying, and have a vertical stroke through the G.

- No. 2. Signature of William Brooke, Lord Cobham, 20 February, 1571-2.

This, though having all the characteristics of his autograph, is remarkable for some extra flourishes.

- No. 3. This, of the same, may be called the typical signature, and is followed with singular precision, which was, perhaps, studied as a rule by official persons. It is attached to an autograph letter "for the queens Ma^{ties} affayres," 8 Jan. 1587-8.

- No. 4. This, also of William, Lord Cobham, though following closely the general form, wants the underline of the flourish which usually completes the W., and possibly similar omissions have occurred in documents at Coventry and Hythe, leading experts of the Record Office to read the W. as ff. It is necessary therefore to give proof that this is the signature of Lord Cobham. It is appended to a lease granted jointly by himself and his wife Frances on the 3rd of June, 1592, signed and sealed by both. No. 5 is a fac-simile of the signature of the latter. His arms of twelve quarterings are attached to the deed, and hers also, the simple arms of Newton.

As there is a fatal tendency in all errors, especially when under an official stamp, to maintain their ground, it is necessary to give them a disproof. In the first Report of the Royal Commission on Historical Manuscripts, London, 1870, p. 100, col. 2, is a letter from the Privy Council, stated to be signed by Christopher Hatton, W. Burghley, F. Cobham, C. Howard, and J. Fortescue. In the Fourth Report of the same, part i. p. 438, col. 2, a document at Hythe is described as

1

Cobham

2

Cobham

February 25/1

3

Cobham

4

Cobham

5

Cobham

6

Henry Cobham

7

Henry Cobham

8

H Brooke

9

Henry Cobham

10

Henry Cobham

COBHAM SIGNATURES.

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W. GRIGGS, PHOTO LITH. LONDON. S. E.

"a letter beautifully written from *Sir Francis Cobham*, addressed to my lovinge fryndes the mayor, jurats, and commons of the town and port of Hythe in reference to Thomas Bodyly, the munificent founder of the Bodleian Library, and saying 'I have receaved answer from the courte whereby I am requyred to reco'mende unto you Thomas Bodyly to be chosen by you for a Burgesse to the Parliament, wth some other p'sone of your owne towne.'" This is stated by Mr. Riley to be signed "F. Cobham," and interpreted to be written by Sir Francis.

The easiest answer to the above is, that there was no such a person as Sir Francis Cobham. No one on the Privy Council, but Sir William, Lord Cobham, had the right to sign himself "Cobham," and no other person but he, as Lord Warden of the Cinque Ports, could possibly have interfered, as from the Court, in the choosing of representatives for Hythe, a Cinque Port town. But Canon Scott Robertson goes far beyond even the experts of the Royal Commission. In his notes on the will of William Lord Cobham, published in *Archæologia Cantiana*, vol. xi. p. 202, he says, "Frances, Lady Cobham, may perhaps have taken an unusual part in assisting her lord in the discharge of his many public duties. The corporation of Hythe possesses a letter, dated 1584, bearing his gartered seal of twelve gatherings, but, says Mr. H. T. Riley, signed 'F. Cobham.' The same signature appears upon a council letter, among the archives of Coventry. Mr. F. C. Brooke, however, thinks that the official experts misread these signatures."

How far it is probable that the wife of a Privy Councillor should sign her name in place of her husband amongst others of the council, whose names are above given, need scarcely be discussed. Nor is it very probable that the wife of the Lord Warden of the Cinque Ports should have conveyed to the corporation authorities of Hythe, in her own name, an order received by her from the Court as to the election of a Burgess to Parliament. However, the question is completely set at rest by the comparison of her own autograph and that of her husband on the same deed. Mr. Brooke, having compared the signature on the Hythe letter with that of Sir William on the document of 1592, testifies to its being identical, and to their agreement with other signatures of the same Lord Cobham in his possession.

No. 6. Signature of Henry, Lord Cobham, August 8, 1601.

No. 7. Signature of above, cir. 1605, when in the Tower, put to the preface of his translation of Seneca de Providentia, addressed "To my very good Lord and brother-in-law the Lo: viscount Crambourne his Ma^{ties} principall Secretarie."

No. 8. Signature as "Henry Brooke," March 26, 1609, to a letter praying "to give direction for y^e payment of 25*l.* du now at our lady for my quarterag."

No. 9. Ditto from the Tower to a similar letter, August 28, 1616.

No. 10. Ditto to his last letter from the Tower on July 13, 1618.

It may be added that these fac-similes are all taken from documents in the possession of F. C. Brooke, Esq. of Ufford.

XI.—*On an Ebony Pax bearing the Legend of St. Veronica.* By PROF. DR.
GEORGE STEPHENS, F.S.A. *London and Edinburgh.*

Read February 14, 1878.

IN the early Church the *kiss of peace*, the simplest of all symbolisms, was a holy ceremony in public worship reverently kept up. Its use lingered on to the Middle Ages. In the twelfth century, when the separation of the sexes began to fall away, the custom came in of the priest kissing a carved ornament instead of his brother-minister, and this in its turn was saluted by the whole congregation. This substitute of any material, costly or simple, even of wood or glass, and generally small in size, after use was returned to the altar. In the West it bore many names—the *Pax*, *Osculatorium*, *Deosculatorium Pacis*, *Osculare*, *Tabula Pacis*, *Asser ad Pacem*, *Paxillum*, *Paxilla*, *Porte-Paix*, *Porte-pax*, *Pax-brede*, *Pakys-bred*, *Pax-bord*, and so on.

In England we are not sure that it was introduced before the thirteenth century. It continued among us down to the Reformation, and even in the Reformed Church itself, but afterwards disappeared. It is now extinct also in the Roman Church, with some exceptions. "The custom of giving the kiss of peace before the communion, in the more solemn service of the Roman Catholic Church called the *High Mass*, is still kept up among the officiating clergy, as likewise among the men and the women of the different religious orders. It is performed by the parties placing their hands upon each others shoulders and bringing their left cheeks nearly in contact with each other."^a Thus its use is very circumscribed, and it is most perfunctorily performed.

Such small articles of church furniture as the pax would usually be melted down or otherwise destroyed. Specimens, indeed, are found in some of our

^a Milner, in *Archæologia*, vol. XX., London, 1824, p. 535.



EBONY PAX BEARING THE LEGEND OF ST. VERONICA.

Full size.



European museums, but they are not many. Several have been preserved as examples of high art. One, probably from the fifteenth century, is figured to illustrate the paper "On the Use of the Pax in the Roman Catholic Church," by the Rev. John Milner, D.D., F.S.A.* This piece is about $2\frac{1}{2}$ inches high by about 2 inches broad, of silver, bluntly pointed at the top, and has a projecting leaf or handle behind, on which it might rest nearly upright when placed on the altar. It is about $\frac{1}{4}$ th of an inch thick, and is the more perfect of two such then existing in the north of England. On it are embossed the Crucifixion, the Virgin below on one side, and St. John on the other. At the foot of the rood are a skull and bones.

In the *Archæological Journal*, vol. ii., London, 1846, p. 149, is engraved a second specimen, apparently from the last quarter of the fifteenth century. It is preserved in New College, Oxford, is of silver parcel gilt, about $5\frac{1}{2}$ inches by $3\frac{1}{10}$ inches, with a handle. To Albert Way's excellent article thereon, as well as to the paper of Mr. Milner, I refer my readers for further information.

Every pax known to me is carved with some scene from the life of Christ, or bears the figure of some saint. I have never seen or heard of one with any subject from the Apocryphal Gospels. The one here engraved (Plate IX.) is the first of this class, as far as I know.

It is here given full size, chemityped by Professor Magnus Petersen, the distinguished Danish antiquarian artist. As we see, it slopes off on each side, being about 1 inch thick in the centre. I added it to my museum in March 1877, by purchase at Copenhagen. It is impossible to say whether or no it be of Danish workmanship, for such things wander strangely about, but I know no reason to the contrary. It is deeply and boldly cut in the hard wood, and is in excellent preservation.

The scene is from the Cross-fastening. The principal figure, Christ, is under a tree on his way to Calvary. Behind, on the left, is Saint Veronica (or Berenice), usually looked on as the woman who had an issue of blood twelve years, and who came near Jesus, and touching his garment was healed. In his last painful march to death she had pitied our Lord, and reached him her veil or kerchief, with which to wipe his bleeding face. When he gave it back, it bore the impress of his features, and became the *Vera Icon*, the miraculous portrait. It is here held by St. Thaddeus, on the front left of Christ. The Saviour, apparently, is pointing to

* *Archæologia*, vol. XX., London, 1824, p. 535. Pl. 24.

this, and saying to his mother, who is on her knees to the right, "See what this woman hath done for me!"

This touching and poetical fable is of great antiquity, was widely known in the Middle Ages, often used in works of art, and is even now not quite forgotten. It was further employed in connection with the legend of Abgarus, whom St. Thaddeus healed by the help of this Veronica veil, as some traditions assert; though others say it was carried by Velosianus to Rome and there cured "Tiberius, the Emperor."

These stories underwent continual modification, as they passed from mouth to mouth, or from copyist to copyist. Thus, in the charming old-English poetical homily, "De Abgaro Rege," by Archbishop Ælfrie, of York (A.D. 1023—1051), the Apostle Thaddeus heals Abgarus at Christ's command, by merely touching him:—^a

Tatheus cwæð þa gyt
to þam wanhalan cyninge:
Fordi ic sette mine hand
on þæs Hælendes naman
ofer þe untrumne!
And he swa dyde,
and se cyning weard ge-hæled sona,
swa he hine hrepode,
fram eallum his untrumnyssum,
þe he ær on þrowode.

*Spake now Tatheus
to the sickly sovereign:
"My hand therefore lay I,
in the name of the Healer,
on thy wasted body!"*
*When, as he did so,
the King was straight whole,
thus cur'd and cleansed
of all the sicknesses
he erewhile suffer'd.*

In other versions again, as in old-Swedish,^b Abgarus in his zeal to see Christ, sent his own painter to Jerusalem to take a portrait of the healer. But the Divine face was too bright for the eyes of the artist, and the Saviour pressed his own kerchief over his countenance, and gave it to the errander stamped with the Heaven-King's image.

This is the first pax found in Scandinavia. Its date would seem to be late in the fifteenth century, but it shows no peculiarity of dress or style which can exactly fix where or when it was produced.

^a G. Stephens. *Tvende Old-Engelske Digte*. (Indbydelsesskrift til Kjöbenhavns Universitets Fest, 1853, 4to.), p. 19.

^b G. Stephens. *Ett Forn-Svenskt Legendarium*, vol. i. Stockholm, 1847. 8vo., p. 232.

XII.—*Notes on Little Horkesley Church, Essex.* By CLEMENTS ROBERT MARKHAM, Esq., C.B., F.R.S., F.S.A.

Read February 7, 1878.

THE church of Little Horkesley has long been sorely in need of thorough repair, and its sepulchral monuments give it a special claim to the attention of antiquaries. They are alike interesting for their antiquity and for the beauty of some of the uninjured brasses. Moreover, they serve to illustrate the history of the place during several centuries. They are the landmarks of local history, giving it accuracy and precision through the names and dates they supply; and they also display the styles of art which prevailed during successive ages. From all these points of view their preservation, and the due maintenance and restoration of the church which contains them, must be a matter of interest to all who desire to secure the safety of national monuments.

The two parishes of Great and Little Horkesley are on the northern border of Essex, reaching to the banks of the river Stour, which separates Essex from Suffolk. They extend along the crest overlooking the Stour valley, and down to the river bank on one side, while on the other they occupy the table land, for a considerable area, between the rivers Stour and Colne. Great Horkesley is very much the largest of the two parishes, covering an area of 3,084 acres. The portion to the south is flat, though well wooded and cultivated, but where the valley of the Stour is overlooked the scenery is very beautiful. It was this scenery which inspired the pencils of Gainsborough and Constable, both natives of the valley.

The name of Horkesley has been variously explained. Morant thought that the original name was *Horse-ley*—the “horse pasture,” or else *Horks-ley* (*hork* being “dirt” or “moist”). A more probable derivation is from *Hor-caes-ley*: *hor* being a boundary, *caes* a camp, *ley* meadows, “the fields about the boundary camp.” This camp would be either upon what is now Horkesley Hill, overlooking Suffolk, the country of the Iceni, or at a site near Pitchberry Wood.

The name of Horkesley does not occur in Domesday Book, because both parishes were then included in the lordship of Nayland, which, at the time of the famous survey, belonged to the great Sweyn of Essex. Under Sweyn a man named Godebold possessed Little Horkesley in the days of Edward the Confessor, and he was the founder of the first family of Horkesley.

In the reign of Henry I. Robert Fitz-Godbold and his wife Beatrix, the niece of Turol, founded a priory at Little Horkesley, to the honour of St. Peter, for Cluniac monks. In their foundation-charter the pious couple say that they have given certain churches to the priory of St. Mary at Thetford on condition that the prior should send as many monks to serve God in the church of St. Peter of Horkesley as the place could conveniently maintain. For their subsistence Robert and Beatrix assigned the church of Wiston in Suffolk, a moiety of the church at Boxted with the tithe from Robert's domain in that parish, and the tithe from land given to Beatrix by her uncle Turol. The monks were to be free from the jurisdiction of Thetford priory, but were to pay it half a mark of silver annually as a recognition. Charters of confirmation were given by Hubert, Archbishop of Canterbury, by Gilbert, Bishop of London, and afterwards by the great-grandson of the founders. The monks of Little Horkesley had to perform services regularly in their own church, and one of their number had to go down into the valley of the Stour and across the river to do the duty at Wiston church.^a The priory stood on the north side of Horkesley church. In the time of Edward II. its annual revenue amounted only to 17*l.* 12*s.* 8*d.*

The descendants of Godebold took the name of Horkesley, and flourished for six generations. Walter de Horkesley held the manor of King Henry III.; his son was Sir Robert, and his grandson Sir William de Horkesley. The latter held the manor with the advowson of the priory; but in 1324 he passed them by fine, after the deaths of himself and his wife Emma, to Robert de Swinburne and his heirs. Sir William de Horkesley died childless in 1332, and his nephew, John de Ross, was his heir, and died in 1375. Thus the family of Horkesley, the descendants of Godebold, became extinct.

Three statues in Little Horkesley church must be referred to the Horkesley family. These effigies are admirably carved in chestnut, and are of colossal proportions. Two are figures of cross-legged knights, seven feet ten inches and seven feet seven inches long, and the third is a female figure seven feet ten inches long. The knights are in complete suits of mail, with long surcoats. The larger

^a In 1854 the Rev. Charles Birch, Rector of Wiston, found a Burgundian florin of Charles the Bold under the church-path at Wiston, about a foot and a-half below the surface. It may have been dropped by one of the monks from Little Horkesley Priory.

one is somewhat mutilated. The other has the hands joined in prayer, a shield on the left arm, a short sword, and with the feet resting on a lion.* These very curious monuments had long been neglected. They are now placed in suitable recumbent positions in the chapel on the south side of the chancel. They are centuries older than the present fabric, and are the sole memorials of the first Horkesley family. The oldest portion of the church is the lower part of the tower and its arches, which may possibly date from the foundation of the priory.

The second family was that of Swinborne, which flourished at Little Horkesley from 1332 to 1430. Robert de Swinborne was succeeded by his son William, who married Philippa, daughter of Sir Richard Gernon. William Swinborne is believed to have been the founder of the present church. Morant says that this appears from the glass windows as they were in 1570. There is an altar-tomb under a low arch on the south side of the chancel, which is said to be that of the founder, but every atom of the brass with which it was once adorned has been picked out. A window on the north side of the nave may be referred to this date, but it is not in its original position. It may have been the east window. There is also an opening in the north wall of the chancel, which appears to have once contained a window, probably of the same date.

Sir Robert Swinborne succeeded his father William, the founder of the church, and married a great heiress, Joan, daughter of Sir John Botetort, by Joan, daughter of Sir John Gernon, and related to Philippa Gernon, the wife of his father, William Swinborne. Sir Robert thus married his cousin. He died on the 19th of October, 1391, and was buried in the chancel, leaving a large family. His five sons were Thomas, Richard, John, Jeffrey, and Andrew. Of his daughters, Alice married John Helion of Bumstead-Helion, and Margery married Nicolas Berners of Codham Hall. John and Andrew Swinborne were also buried in the chancel.

Sir Thomas Swinborne, son and heir of Sir Robert, was a great captain in the French wars. He was mayor of Bordeaux and constable of the castle of Fronsac in Guienne. Sir Thomas died on August 9th, 1412, and was buried by the side of his father. A splendid altar-tomb of stone was built over their graves, upon which are placed two figures in brass of the size of life, each under light and very beautiful triple canopies, and on lateral shafts are hung the escutcheons of Swinborne, Gernon, Erpingham, Cornard, and another, destroyed. Both figures are in helmets and plate armour, with short surcoats, swords, and misericorde daggers,

* A small engraving representing these effigies appeared in *Excursions in the County of Essex*, 12mo. London, 1819, vol. ii. p. 178.

hands joined in prayer, and the spurred feet resting on lions. But there are slight differences in the details which very clearly mark the changes in fashion between the days of the father and those of the son. The father has a gorget of mail, an embroidered sword-belt, and vandyked edges to the surcoat like that on the monument of John III. of Brittany (1341) at Ploermel. The sword-belt has R. and S. alternately in circles, with a monogram of R.S. in a larger circle as a clasp. The son has no mail armour; the narrower sword-belt comes diagonally from the hip, and there are circular palettes at the shoulder and elbow-joints of the armour. He wears a collar of SS. and on the palettes of his armour are crosses of St. George. Round the edge of the tomb there is the following inscription:—

*Icey gist mons' Robert Swynborne Seignour de Horkesley petite Que morust le iour de seinte
flere lan du grace mill' ccc quatvintz unizisme de qy alme Amen. [Icey] gist Mons'.
Thomas Swynborne, fils du dit Monsr. Robt. Swynborne s' de Mammys, Maire de Burdeux
et capitaigne de Hronsah. Que morust en la veile de Seint Laurence l'an du gce mill:cccxxii.
del alme de qy dieu ept pitee et merceps. Amen. Amen.*

Nearly the whole of the brass of this splendid tomb is preserved.^a The tomb is now under the easternmost arch of the nave.

In the south aisle there is a monument to two other Swinbornes, brothers of Sir Thomas, which was also formerly ornamented with two effigies in brass.^b The circumscription is as follows:—

*Hic iacent Johannes Swynbourne et Andreas Swynbourne frater eius qui vero Johannes obiit in
vigilia Sancti Georgii anno domini millmo cccc xxx et dict Andreas obiit in vigilia Sancti
Gregorii anno domini millmo cccc xliii quor aiabs ppiet deus Ame.*

The last Swinborne was this John, who died childless on the 22nd of April, 1430. There is another curious brass of a lady tied up in a shroud with the face showing, about 18 $\frac{3}{4}$ inches long. The inscription is lost, but the person commemorated is Katherine Leventhorp, who died 1502. The examples of shrouded figures in brass, mentioned by Haines, are of dates from 1431 to 1530.

The inheritance of Little Horkesley came to Margery, sister of Sir Thomas Swinborne and wife of Nicholas Berners, who died in 1441. Their daughter Catherine brought it to the Fynderne family, by her marriage with Sir William Fynderne, who died in 1462. Their son, also Sir William, inherited Little Horkesley and died in 1515. He was followed by another William, and the last of the family was Thomas Fynderne of Little Horkesley, who died childless in

^a A careful engraving of these brasses is published in Waller's *Monumental Brasses*; see also Suckling's *Essex*, and Boutell's *Monumental Brasses*, p. 55.

^b Engraved in the publications of the Antiquarian Etching Club, vol. iii. pl. 9.

1523. Thus the Fyndernes were there during four generations, from 1441 to 1523.

The last Fynderne married Bridget, daughter of Sir William Waldegrave, a lady whose home was not far off, at Smallbridge in the valley of the Stour. Thomas Fynderne died on the 10th of March, 1523, and his widow married secondly the second Lord Marney of Layer Marney. She died on September 30th, 1549, and ordered in her will that upon her tomb there should be three pictures of brass, one of herself without any coat armour, and upon her right side the picture of the Lord Marney, her last husband, in his coat armour, and upon her left side the picture of her husband Fynderne in his coat armour. This desire was complied with; and the three brass effigies are on a marble gravestone, formerly an altar-tomb, now in the centre of the chancel aisle.^a Both the male figures are in surcoats of their arms. Lord Marney has on his surcoat and both sleeves the Marney coat (a lion rampant guardant) quartering two other coats. The head rests on a helmet with a cap of maintenance and the crest, and his feet are on a guardant lion. Thomas Fynderne also has the arms (Argent, a chevron between three cross-crosslets fitchée sable) on his surcoat and two sleeves, his head on a helmet with the crest, and his feet on ground with flowers. The injunction of Lady Marney as regards the absence of coat armour on her effigy has not been followed. Her head, with an elaborate coiffure, rests on a tasseled pillow, and a mantle fastened across the chest by long tasseled bands reaching to the ground has on it the arms of Waldegrave (Party per pale argent and gules) quartering another coat. Over the heads of the effigies two shields with the arms of each husband impaled, and the following inscription:--

Here under lyethe Dame Bygete Harnay, late the wyffe of John Horde Harnay and sometyne wyffe to Mr. Thomas Fynderne Esquier, and decessyd the xxixth day of September in the yere of our lorde God m.cccc.xlix.

John Lord Marney, the lady's second husband, died in April 1525, only two years after the death of Mr. Fynderne, whom she must have mourned for but a very short time. She remained a widow for 24 years, and appears to have lived at Little Horkesley, where she had jointure lands. She had no children, and therefore the Fynderne family became extinct.

Of the church founded by the Swinborne family little remains. There is a Decorated window in the north wall of the present church of the date of about 1350, already mentioned, and a pointed doorway; and the Horkesley and Swinborne tombs must have been in the earlier building.

^a They are engraved in Suckling's *Essex*.

But the present church of Little Horkesley is more than a century later, and was probably built in the days of Sir William Fynderne. It consists of a nave, chancel, and south aisle, and a low square tower, all in the Perpendicular style of architecture. (See plan, Plate X.) In the east window there are four lights, an unusual feature, but the Perpendicular tracery has been destroyed. The aisle is separated from the nave by an arcade of four arches, and there are four Perpendicular windows on the south wall, the second from the west having a niche in the side of the wall. There are small bits of stained glass with the letters B and M in yellow often repeated within circles of blue and green, and in the west end window W and S. At the east end of the aisle there is a Perpendicular window of three lights; and in the upper opening in the tracery at each angle is the sun in splendour, in yellow glass. This was the cognizance of King Edward IV. and is often met with in churches of his time. It therefore fixes the date of the window, and probably of the present church.

About a dozen tessellated tiles have been found, some with roses and others with geometric patterns—a circle containing two intersecting triangles with smaller circles.

The north side of the church needs careful study. It was on this side, close to the wall, that the priory stood,—where a farmhouse called the "Priory" now takes its place. This circumstance, and arrangements for communication between the priory and the church, probably explain some peculiarities in the north wall.

In the north wall of the nave there are two windows. One, on the west side, is in the Perpendicular style, similar to those in the rest of the church. But the other is a decorated window with three lights and tracery above, which is evidently not in its original position, for there is a pointed doorway in the wall on its eastern side, bricked up, and the lower angle of the window cuts into it. Inside there is a niche, in a later style than the window, in the east side of it, and in the thickness of the wall. Close to the window, and at the point where the bricked-up doorway would have opened into the church, there is a steep stair in the thickness of the wall, which once no doubt led to a roodloft dividing the nave from the chancel. It seems clear that the pointed doorway was there before the stairway, and before the Decorated window in its present position. Part of the wall between the door and the east end of the nave is of thin bricks laid in herring-bone fashion.

The north wall of the chancel is also peculiar. First there is a high pointed arch which had been bricked up. On one side it would appear by the continuous line as if it had reached the ground and was a doorway. But on the

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other side the line is not continuous below the height where the sill of a window might have come. Next to it there is a late Perpendicular doorway with a square head, also bricked up, but with the stonework intact. Between this doorway and the east end a second arch intervenes with pillars, which opened to a side chapel, the foundations of which have been found.

It seems probable that the pointed door was the entrance from the priory into the first church; that on the building of the later church the north wall was partly preserved, but that a new door to the priory was made from the chancel; a roodloft with a stair necessitating the bricking-up of the old door; and that a Decorated window from the older building was inserted in the north wall, overlapping the doorway. There are remains of the rood-screen, and also an ancient screen in the aisle.

The possession of Little Horkesley on the extinction of the Fynderne family reverted to a descendant of Alice, the younger sister of Sir Thomas Swinborne, who married John Helion. Their granddaughter Isabel married Humphrey Tyrrel of Warley, and had a daughter, Anne Tyrrel, who became the heiress of Little Horkesley, as third cousin and next of kin to Thomas Fynderne. She married Sir Roger Wentworth, and died in 1534, leaving two sons—Sir John Wentworth, who died in 1567, and Henry. This was a branch of the Wentworths of Nettlestead, Sir Roger having been a nephew of Sir Philip Wentworth of Nettlestead.

Little Horkesley priory was one of the small monasteries which Cardinal Wolsey obtained leave from the Pope to suppress in 1525, in order to appropriate the revenues to his new college at Oxford. The total revenues only amounted to 27*l.* 7*s.* 11*d.* Upon the Cardinal's *præmunire* it escheated to the Crown, but Sir Roger Wentworth claimed to be the representative of the founder by right of his wife. In 1554 the priory site and lands were, however, sold to Sir John Huddleston, who resold them to one Roger Parkes, who again sold them in 1577 to John Ball. Eventually, after passing through several hands, they were bought by Mr. James Joscelyn, who built a house on the site of the priory in Morant's time, about 1746. The "Priory" farm still belongs to the Joscelyn family.

Sir John Wentworth, of Little Horkesley, who died in 1575, had an only daughter and heir by his wife Anne, daughter of John Bettenham, of Pluckley, in Kent. This was Anne, who married first Sir Hugh Rich, of Gosfield, and secondly, Henry FitzAlan, Lord Maltravers, who died at Brussels in 1556, aged nineteen, during his father's lifetime. Lady Maltravers had no children. She lived generally at Gosfield, and there she received Queen Elizabeth during her

progress in August 1561. The Queen came from Helmingham, near Ipswich, to Gosfield, and probably passed through Horkesley on her way. Lady Maltravers died in 1580, and was succeeded by her cousin John, son of Henry Wentworth, who lived for some time at Little Horkesley, and died in 1588. He married Elizabeth, daughter of Christopher St. Lawrence, Lord Howth; and his son Sir John Wentworth sold the Little Horkesley estate in 1617 to Sir Humphrey Winch.

From 1322 to 1617, a period of nearly 300 years, Little Horkesley had gone by descent to the families of Swinborne from 1322 to 1418, Fynderne from 1418 to 1523, and Wentworth from 1523 to 1617. In 1617 it was for the first time alienated, and it passed through several hands.

A very curious lectern made up from old pieces of carved wood probably belongs to the period of the Wentworths. The stand is carved with some elaboration, and the desk is fitted so that it can be raised and lowered at pleasure.

Onslow Winch, son of Sir Humphrey, jointly with Judith his wife, sold Little Horkesley in 1630 to Sir John Denham, whose son, Sir John Denham, the poet, forfeited the estate for his adherence to Charles II. The Parliamentary Commissioners put it up for sale, and it was bought by George Wither for 3,230*l.* 9*s.* 7*d.*; but in 1661 it was finally purchased by Azariah Husbands, Esq. son of James Husbands, of Wormbridge, in Herefordshire.

The first Sir John Denham, of Little Horkesley, was Chief Baron of the Exchequer in Ireland, and his son John was born at Dublin in 1615. In 1631 the son was sent to Oxford, where, as Johnson tells us, he was considered "as a dreamy young man, given more to dice and cards than study." He had nearly ruined himself by gambling when the Civil War broke out, but he also acquired a high reputation as a poet by his publication of "The Sophy" and of "Cooper's Hill." Adhering to the royal cause he followed the fortunes of Charles II. on the Continent, and his estates were sold to satisfy his creditors. At the Restoration he was one of the Knights of the Bath created before the coronation, and became Sir John Denham, K.B. His last production was an excellent poem on the death of his friend Cowley, whom he did not long survive, dying on March 19th, 1668.

Two other families appear as owning property in Little Horkesley in the days of the Wentworths and Denhams. The Lynnes were seated at Westwood, in this parish, from before 1616 to the end of the last century. William Lynne of Westwood was buried at Little Horkesley in 1616, John Lynne in 1680, Jacob Lynne in 1708, the widow of Thomas Howth Lynne in 1772, and Nicholas Garrard Lynne of Westwood in 1777. Westwood afterwards became the property of Colonel Watson, whose two daughters married respectively Major Rooke of West-

wood and the Rev. Blair Warren of Little Horkesley. From the Rookes Westwood passed to Mr. Leveson Gower, and it is now the property of Mr. MacAndrew.

The Sadlers have been established both in Great and Little Horkesley for upwards of three centuries. In the Survey of Little Horkesley of the time of Henry VIII., now in the Chapter House at Westminster, William Sadler is mentioned as owning a close called "Thikkette," and other land. Christopher Sadler was buried at Great Horkesley in 1625. His son, Christopher Sadler, was the rector's churchwarden in 1635, and died in 1698. His son, William, had a son William, baptized in 1706. Another Christopher Sadler was buried in 1741. In Morant's time (1746) George and Joseph Sadler had estates in Great Horkesley. On October 4th, 1763, Miss Mary Sadler was married to the Rev. John Carr, curate of Great Horkesley. George Sadler, of Little Horkesley, born in 1760, married Harriet, daughter of the Rev. Titus Stebbing, rector of Tattingstone, in Suffolk, who died in 1794. The Rev. William Sadler was born in 1764, and died in 1837, leaving a son, the late William Stebbing Sadler, Esq., of Old House, Great Horkesley. His son, Robert Stebbing Sadler, Esq., is now of Old House. His cousin, Major George Stebbing Sadler, of the Grove, Great Horkesley, died in 1869, leaving a daughter, Clara, married to the Rev. John Weir, incumbent of Little Horkesley.

Azariah Husbands, Esq., of Little Horkesley, married Elizabeth, daughter of John Feilden, Esq., of Barrow Court, in Hampshire, and widow of Richard Knight, Esq., of Chawton, near Alton. He died on April 5th, 1666, and she on October 24th, 1684, leaving three children, Edward, Mary, and Anne. There are monuments to Mrs. Husbands (with the arms of Feilden impaling Knight and Husbands), and to her daughter Elizabeth, who died on November 25th, 1732, aged 78.

Edward Husbands, the son, inherited the estate of Little Horkesley Hall. He was first of Queen's, then of Corpus Christi College, Oxford. He married first, Elizabeth, daughter of Edmund Coleman of Ipswich, who died in 1687, and was buried in the chancel; and secondly, Ann, daughter of Thomas Burroughs of Ipswich. By his second wife he had seven children. He rebuilt the mansion-house near the church, called Horkesley Hall, and died in 1736, aged 79.

James Husbands, the eldest surviving son, was Fellow of Gonville and Caius College, Cambridge, LL.D., rector of Ashdon and Fordham, and vicar of Little Horkesley. He married Mary Sindrey of Cambridge, and died childless in 1749. There are mural monuments to the memory of Azariah Husbands, and of his grandson, the Rev. James Husbands, LL.D.

No stipend appears to have been reserved for maintaining a minister after the

dispersion of the monks, on the ground probably of exemption "*propter visitationem*" to the priory under 4 Henry IV., cap. 12.^a Dr. Husbands left to the living what he thought to be the amount of the small tithes of the parish, about 41*l.* a year, but his will was disputed. His father, Edward Husbands, Esq., gave 200*l.*, to which have been added seven other sums of 200*l.* each from Queen Anne's Bounty in 1721, 1750, 1754, 1786, 1792, 1816, and 1829, and with this fund an estate has been purchased at South Haningfield. The value of Little Horkesley is given in the Clergy List as 80*l.* a year, and there is no house. Dr. Husbands, leaving no children, entailed his estate upon the daughter of his sister Anne, who married Richard Gideon Glanville, of Elmeset. This daughter, named Anne Gideon Glanville, married Dr. William Blair, M.D., of Lavenham, in Suffolk. Their son, Edward James Husbands Blair, of Little Horkesley Hall, died unmarried in 1824, aged 63. He was succeeded in the estate by his two sisters, Sarah Sindrey Warren, widow of the Rev. William Hamilton Warren, and Margaret Blair. After their deaths the Rev. J. C. Blair Warren, surviving son of Mrs. Sarah Sindrey Warren, succeeded to Little Horkesley Hall. He was also vicar of Little Horkesley from 1826 until his death on January 8th, 1856. The house built by Mr. Edward Husbands was pulled down by the Warrens, and a modern mansion-house was substituted. Mr. Warren married a daughter of Colonel Watson, of Westwood, but had no children.

Little Horkesley Hall is now the property of Thomas Bourdillon, Esq., and the Rev. John Weir is incumbent of the parish.

The church is a good specimen of Perpendicular architecture of the close of the fifteenth century, but it has long been in sore need of thorough repair. The work of restoration is about to be undertaken, through the liberality of Mr. Bourdillon, who furnished the bulk of the sum required, the rest being made up by subscriptions.^b

Wooden effigies are rare, the material of which they are made being so liable to decay. A certain number of them, however, have been preserved, and I have thought that it might be of interest to append a list of such as are known to me, including some that have been lately destroyed. Some account of them has been given by Gough in the introduction to the two portions of his *Sepulchral Monuments*. A notice of them has also appeared in the *Archæological Journal*, vol. xviii. p. 74, and a few notices are scattered through vols. vii.—ix. of *Notes and Queries*.^c

^a Confirming the Act of 15 Rich. II. cap. 6, providing for the maintenance of vicars in the appropriation of benefices.

^b The work has since been executed by Mr. Blomfield as architect, and was completed in 1878.

^c See also *Transactions of Essex Archæological Society*, iv. 117.

LIST OF WOODEN EFFIGIES IN ENGLAND.

Places.	Number of Effigies.	Descriptions.	Authorities.
BERKSHIRE.			
Burfield - - -	1	Cross-legged - - - -	Gough, I. xcix.; Lysons, <i>Mag. Brit.</i> 210
Englefield - - -	1	Lady; early 14th century - -	Gough, I. xcvi.; Lysons, 209
Sparsholt - - -	3	Man in armour; two ladies on altar-tombs	Gough, I. xcvi.; Lysons, 209; <i>Notes and Queries</i> , viii. 255
BUCKINGHAMSHIRE.			
Clifton Reynes - -	4	Simon de Borard, cross-legged, and wife, c. 1270; Ralph de Reynes, cross-legged, and wife, c. 1310	Lysons, <i>Mag. Brit.</i> 490; Lipscomb, iv. 120; <i>Notes and Queries</i> , viii. 455. Both engraved, <i>Arch. Journ.</i> xi. 149, 152
BRECON.			
Brecon, St. John's -	1	Reginald de Braose (destroyed) -	Jones, <i>Brecon</i> , i. 128, ii. 34; <i>Arch. Journ.</i> xviii. 75
CAMBRIDGESHIRE.			
Hildersham - - -	2	Sir Robert Busteler, cross-legged, and wife	Lysons, <i>Mag. Brit.</i> 66, 211
CUMBERLAND.			
Millom - - -	1	Armour, 14th century - - -	Lysons, <i>Mag. Brit.</i> cxcvi.
Ousby - - -	1	Armour - - - -	Gough, II. cx.; Lysons, <i>Mag. Brit.</i> cxcvi.
St. Bees - - -	1	Anthony, Lord Lucy, 41 Edw. III.	Gough, II. cx.; Hutchinson, ii. 41; Nicholson and Burn, ii. 41; Lysons, cxcvii.
DERBYSHIRE.			
Derby, All Saints -	1	Ecclesiastic (removed to crypt) -	Glover, Pt. I. vol. ii. 495
DEVONSHIRE.			
West Downe - - -	2	John de Stowford, Chief Baron of Exchequer, 19 Edw. III. (lost), wife remaining	<i>Arch. Journ.</i> xviii. 75; Lysons, <i>Mag. Brit.</i> cccxxiii. 168
DURHAM.			
Auckland, St. Andrew's	1	Pollard (?), cross-legged - -	Hutchinson, iii. 330; Pennant, <i>Tour in Scotland</i> , iii. 344; <i>Arch. Journ.</i> xviii. 74.
Brancepeth - - -	2	Earl of Westmoreland and wife -	Hutchinson, iii. 314
Durham, St. Giles -	1	John Heath, in armour, c. 1590 -	<i>Notes and Queries</i> , viii. 180
Greatham Hospital -	1	Man in gown (destroyed ?) - -	Gough, II. cx. Engraved, <i>Gent. Mag.</i> Dec. 1788, p. 1046
Staindrop - - -	2	Henry, Earl of Westmoreland, and wife, 1564	Gough, I. xcix. Engraved, <i>Ant. Repertory</i> , iii. 302
ESSEX.			
Danbury - - -	2	Cross-legged - - - -	Morant, ii. 30. Engraved, Strutt, I. xlv. xlvii.
Earl's Colne - - -	3	Cross-legged (destroyed) - -	Morant, ii. 213; Wright's <i>Essex</i> , i. 424
Elmstead - - -	1	Cross-legged - - - -	Morant, i. 445; Wright, ii. 760; <i>Arch. Journ.</i> xviii. 74
Little Baddow - - -	2	Ladies, 14th century - - -	<i>Arch. Journ.</i> * xviii. 74
Little Horkeley - -	3	Two cross-legged; one lady -	Suckling's <i>Essex</i> ; <i>Arch. Journ.</i> i. 70; <i>Notes and Queries</i> , vii. 607. Engraved, <i>Excursions in Essex</i> , ii. 178
Little Leighs - - -	1	Ecclesiastic, c. 1350 - - -	<i>Arch. Journ.</i> xviii. 73; <i>Trans. Essex Archaeol. Soc.</i> ii. 167
Messing - - -	1	William de Messing (destroyed) -	Gough, I. xcvi.; Suckling, 130; <i>Arch. Journ.</i> xviii. 74
GLOUCESTERSHIRE.			
Gloucester Cathedral -	1	Robert, Duke of Normandy -	Gough, I. xcvi.
HEREFORDSHIRE.			
Clifford - - -	1	Monastic figure - - - -	<i>Arch. Journ.</i> xviii. 75
Much Marcle - - -	1	Cross-legged, in gown - - -	Gough, II. cx.; <i>Arch. Journ.</i> xviii. 75
ISLE OF WIGHT.			
Brading - - -	2	Man in Armour and wife, temp. Eliz.	Englefield, 96; Barbers's <i>Guide</i> , 1850, p. 28, 29
KENT.			
Canterbury Cathedral -	1	Archbishop Peckham - - -	Gough, I. xcvi.
Goudhurst - - -	2	Sir . . . Culpeper and wife, 1537	Gough, I. xcix.; II. cx.; <i>Gent. Mag.</i> Sept. 1785, p. 679
LINCOLNSHIRE.			
Deeping Market -	1	Sir Baldwin Wake, cross-legged, 1311	Gough, II. cx.

* The name of the church is erroneously given as Little Eoden. The Rev. W. B. Ady, Rector of Little Baddow, has been good enough to inform me that the effigies are in the south wall of the church, and what was evidently a chantry; they are supposed to be two sisters of Sir Hugh de Badewe who are known to have founded a church near Sir Hugh's mansion at Great Baddow.

Places.	Number of Effigies.	Descriptions.	Authorities.
MIDDLESEX. Westminster Abbey -	2	William de Valence; King Henry V. (foundations for metal plates)	Gough, I. xcvi. II. 63. Engraved, Gough, Stothard, &c.
MONMOUTHSHIRE. Abergavenny -	1	George, Lord Cantilupe, 1273, cross-legged	Gough, I. xcix.; Coxe, p. 192. Engraved, <i>Ancient Monuments at Abergavenny</i> , by O. Morgan, 1872, Pl. i.
NORFOLK. Banham - - -	1	Sir Hugh Bardolph? - - -	Gough, I. xcvi. II. 179. Engraved, Blomefield, i. 353
Fersfield - - -	1	Sir R. du Bois, cross-legged, 1311	Blomefield, i. 104. Engraved, Gough I. 79, and by Stothard
South Acre - - -	1	Sir Roger Harsick - - -	Gough I. xcvi. II. 84
NORTHAMPTONSHIRE. Alderton - - -	1	Sir William de Combemartyn, cross-legged, c. 1318	Gough, II. cx.; Baker, ii. 122. Engraved, Hartshorne, <i>Mon. Effigies of Northants</i> .
Ashton - - -	1	Sir Philip le Low, c. 1320, cross-legged	Gough, II. cx. Engraved, Hartshorne
Braybrooke - - -	1	Sir Thomas le Latimer, 1334, cross-legged	<i>Arch. Jour.</i> xviii. 75. Engraved, Hartshorne
Cold Higham - - -	1	Hawyse de Keynes, c. 1330 - -	Engraved, Hartshorne
Dodwood - - -	1	Sir John de Pateshull, 1350, cross-legged	Engraved, Hartshorne
Gayton - - -	1	Sir Philip de Gayton, 1316, cross-legged	Baker, ii. 281; <i>Arch. Jour.</i> xviii. 75. Engraved, Hartshorne
Holdenby - - -	1	Man in gown (destroyed) - -	Gough, II. cx.; Bridges, i. 529; Baker, i. 210
Panlsey - - -	2	Sir Lawrence de Pavely and wife, c. 1330	Gough, II. cx.; Baker, 207. Engraved, Hartshorne
Woodford - - -	2	Sir Walter de Treilly, cross-legged, and wife, c. 1290	Engraved, Gough, II. cvi. Pl. iv. and Hartshorne
NOTTINGHAMSHIRE. Ratcliffe-on-Trent -	1	Stephen de Ratcliffe - - -	Thoroton, 185, 187; <i>Arch. Jour.</i> xviii. 75
Laxton - - -	1	Lady, a de Everingham, c. 1300 -	<i>Arch. Jour.</i> xviii. 75. Letter, C. G. S. Foljambe
RUTLAND. Ashwell - - -	1	Cross-legged - - -	<i>Arch. Jour.</i> xviii. 75; <i>Notes and Queries</i> , vii. 528
Tickencote - - -	1	Cross-legged? - - -	Whitaker, <i>Loidis et Elmetis</i> , 323; Blore's <i>Rutland</i> , 74; <i>Notes and Queries</i> , vii. 528
SHROPSHIRE. Berrington - - -	1	Armour, 13th century - - -	Eyton, <i>Shropshire</i> , vi. 282
Burford - - -	1	Armour, c. 1500 - - -	<i>Notes and Queries</i> , ix. 62
Pitchford - - -	1	Sir John de Pichford, 1285, cross-legged	<i>Arch. Jour.</i> xviii. 75. Engraved, Eyton, vi. 282
SOMERSETSHIRE. Chew Magna - - -	1	Sir . . . Hauteville, c. 1330 -	Gough II. cxi.; Collinson, ii. 108; <i>Notes and Queries</i> , viii. 604. Engraved, <i>Arch. Jour.</i> xiv. 158
Norton Midsomer -	1	Armour - - -	Gough II. cxi.
SUFFOLK. Boxted - - -	2	William Poley and wife, 1587 -	<i>Notes and Queries</i> , ix. 457; Davy's <i>Coll.</i> (B. M.) MS. 19077, f. 124
Bures - - -	1	Sir John Cornard, cross-legged -	Gough, I. xcvi. II. 170
Heveningham - - -	3	Sir John Heveningham and wife, and another in armour (lost)	Gough, I. xcix.; Davy's <i>Coll.</i> 19081, f. 64, 65
Wingfield - - -	2	Michael de la Pole, Earl of Suffolk, and wife, 1415	Gough, I. xcix.; Davy's <i>Coll.</i> 19092, f. 399
SURREY. Southwark, St. Saviour's	1	Cross-legged - - -	Gough, I. xcix.; Manning and Bray, iii. 573; Brayley, v. 364. Engraved, Grose, <i>Ant. pref.</i> pl. iii. fig. 2
SUSSEX. Slyndon - - -	1	Armour, temp. Hen. VIII. - -	Gough, II. cx.; Dallaway, <i>Western Sussex</i> , i. 151
YORKSHIRE. Allerton Manleverer -	2	Cross-legged - - -	Hargrove, <i>Hist. of Knaresborough</i> (1832), p. 281
Thornhill - - -	3	Sir John Saville and two wives, 1529	Allen, <i>Yorkshire</i> , iii. 352; <i>Notes and Queries</i> , vii. 528. Engraved, Whitaker, <i>Loidis et Elmetis</i> , 322

XIII.—*On the Depositions of the Remains of Katharine de Valois, Queen of Henry V., in Westminster Abbey. By the Very Rev. ARTHUR PENRHYN STANLEY, D.D., Dean of Westminster, F.R.S., F.S.A.*

Read January 31, 1878.

BEFORE I begin to read this paper I must apologise to the Society of Antiquaries for its mode of composition.

In the controversies respecting the origin of the Homeric poems, which have raised so much attention of late in connection with Dr. Schliemann's discoveries, there was a theory started amongst scholars that Homer was not the author of the Iliad and Odyssey, but, as the word might imply in the original, "the man who joined or weaved together" the various poems supplied to him by other persons, which, from this stitching or joining process, were called Rhapsodies. This theory has of late years in England—partly under the influence of a celebrated political personage—fallen into discredit. But the present paper is an exact example of the process in question. I am on this occasion but the "Homerus," the compiler, who has woven together the fragments communicated to him. On this, as on similar occasions when I have addressed you, I have been but the mouthpiece of a distinguished company of Rhapsodists, whose names are well known to you: Mr. Doyne Bell, Secretary to Her Majesty's Privy Purse, the chief living authority on all questions of English royal interments in the Abbey or elsewhere; Mr. George Scharf, the chief living authority on all questions of likeness or portraiture: Mr. Poole, our master mason, the chief living depositary of the traditions of Westminster Abbey. These, and others whose names will appear as we proceed, are the real authors of this paper, and the critical sagacity of this audience, or possibly of this learned Society in some distant age, will be exercised in endeavouring to discover the ownership of the particular portions.

Few spots in Westminster Abbey have a more peculiar interest, both historical and architectural, than the chantry of Henry V. It marks the site of the ancient reliquary of the church; it was founded in accordance with his will, signed by him at Southampton just before his embarkation for France; it is built in the form of his initial letter; it is filled with his trophies; it is an expression in stone of the devotion by which the Lancastrian princes endeavoured to compensate for their defective title to the crown; each one of them, and they only, having established such chantries:—Henry IV., at Canterbury; Henry V., at Westminster; Henry VI., at Cambridge and Eton; Henry VII. (if we may term him a Lancastrian), in the famous chapel that bears his name. Of all the sepulchres in the Abbey it is the largest in extent, and the most elaborate in its details. It bridges over, as by a natural isthmus, the gulf between the mediæval and modern history of the Abbey.

It is curious that in the early part of the last century this interesting chapel was left in the midst of the Abbey, so neglected, unexplored, and almost unknown, that Dart, writing about 1723, says:—"There was likewise a chauntry founded in this church for the soul of Henry V., which his son, Henry VI., endowed with land. This chauntry is over the chapel in which that prince lies buried, wherein they tell us is his shield and sword, and other warlike furniture. It is not unlikely the altar there may be still standing, being so obscure a place as might likely pass the notice of the reformers, having two ascents to it, one on each side the iron screen. But I could not satisfy my curiosity in this respect, being informed that the sacrist some years since dying suddenly in the night the key was lost, and the choir have never since had one made to it." ^a Dart subsequently adds, "By the help of a ladder I have—since writing that—scaled the walls of this chauntry chapel. On the inside of those walls are presses of wainscot, with shelves and folding doors, very neat. There are in all six, viz. four each side, *i. e.*, the lining of these side walls; and on each side of the altar is one smaller. The altar is ascended by two steps; one crosses the chapel from the extremes of the side presses, and the other nearer the altar, which is broken away. The places where it was fastened to the wall are visible." ^b

The chantry has undergone several changes since that time, but it is only quite recently that, in the general improvements of the Abbey, attention was called to a slab in the floor, which upon examination proved to be that belonging to the old altar described by Dart as broken away. The five crosses upon it were distinctly

^a Dart, i. 45.

^b *Ibid.* i. 63.

visible. It was doubtless this table of the altar of the Annunciation^a that was first placed in the chapel of relics at the entrance to the Lady Chapel of King Henry III. When King Henry VI. erected the tomb and this chantry to the memory of his father King Henry V. it was made the altar-table of this chantry. When the Reformation came, the altar was removed and partly destroyed, but the table was made part of the floor, when several of the ancient tiles were removed in order to receive it, and there it has remained for more than three centuries. Its edges were found to be moulded as for an altar-table; it had not been deliberately destroyed, but it appeared that after it had been placed on the floor it had been broken into twenty pieces by the action of fire, of which the marks still remain. When this was done is quite unknown; possibly in the disorders of the great Civil War; more probably on the occasion of the lighting of some fire for warmth or cooking during the long hours of one of the coronations.

The restoration of this altar-slab to its proper place suggested the suitability of this spot for the resting-place of one who was specially connected with this chapel, and whose remains by a series of strange misfortunes had been long deprived of a sepulture worthy of her rank and of her eventful history.

Katharine de Valois, the "Kate" of Shakespeare, was born in 1401, married to Henry V. in 1420, crowned in the Abbey in 1421, gave birth to Henry VI. in 1422, then married Owen Tudor, and, after bearing him three children, died at Bermondsey Abbey on the 2nd or 3rd January, 1437-8, "where," says Sandford, "she either took sanctuary, or for devotion repaired."^b

On the 8th of February 1438 her body was conveyed by water to the collegiate church of St. Katharine, near the Tower of London, of which foundation she as Queen Consort of England had been patroness. A funeral service was performed there, and she was then carried to St. Paul's Cathedral, where another service was held. The final funeral celebration was in Westminster Abbey, where, as the first royal interment in the Lady Chapel, she was probably buried in front of the altar. The prominent position of her tomb is indicated in the following passage in the deposition of John Ashby^c (1460-1) concerning the sepulture of King Henry VI., when that King came to the Abbey to select his own burial-place. No suitable spot could be found in the chapel of St. Edward; and "so he went in to our Lady Chapelle of the same chirche, and there beheld the tombe of Quene Kateryne, modre to the saide King Henry the VI. And ther it was spoken and devysed by the saide persones that the saide tombe of Quene Kateryne myghte be

^a See Will of Henry V. (Rymer, ix. 289).

^b Sandford, p. 285.

^c Memorials of Westminster, by Dean Stanley (1869), p. 600.

removed some dele lower, and to be more honorable apparelyd then it was. And after that doone a tombe for the seide King Henry the VI. to be sett betwixt his seid moder's tombe and the aulter of the same Our Lady Chapelle." No decision was then arrived at, and another suggestion was adopted for the tomb of Henry VI.; and the tomb of his mother, "dishonorably apparelled," remained until in 1502 Henry VII. pulled down the Lady Chapel in order to erect the present structure, when "her body was taken up, and, the coffin being decayed, it was put in a wooden chest, and placed near her husband's tomb in the east end of the Friars (as Stowe calls it)."^a

In Henry VIIth's will, dated Canterbury, the 10th of April, the twenty-third year of his reign (1508),^b is the following reference to her interment: "In our monastery at Westminster resteth St. Edward, &c. &c. and diverse other of our noble progenitors and blood, and specially the body of our graunt dame of right noble memorie, Quene Kateryne, wif to King Henry the Vth, and daughter to King Charles of France, &c. our bodie therefore to be buried within the same monastery, that is to saie, in the chapell where our saide graunt dame laye buried, the which chapell we have begoun to buylde of newe in the honour of our blessed Lady."

In 1631 Weever, in his *Funeral Monuments*, referring to Westminster Abbey, writes: "Katharine, Queen of England, lieth here, in a chest or coffin with a loose cover, to be seen and handled of any who will much desire it; and that by her own appointment (as he who showeth the tombes will tell you by tradition), in regard of her disobedience to her husband for being delivered of her son, Henry VI., at Windsore, the place which he forbad. But the truth is that she being first buried in Our Ladies Chappell here, in this church, her corps was taken up, when as Henry VII. laid the foundation of that admirable structure, his chappell royall, which have ever since so remained, and never re-buried." Sandford, writing in 1662, says, "She remaineth still above ground in a coffin of boards, near the sepulchre of Henry V., her first husband, by her erected in the chapel of the Kings, the figure of which coffin is marked with the letter B in the 289th page of this book." On reference to this engraving (by Gaywood) it will be observed that the coffin is lying on the south side of the King's tomb.

The following characteristic entry in Pepys's *Diary* records what he saw upon the occasion of his visit to the Abbey: "23 February, 1668-9. To Westminster Abbey, and there did see all the tombs very finely, having one with us

^a Dart, ii. 39.

^b Henry VII. died 21 April, 1509.

alone, there being other company this day to see the tombs, it being Shrove Tuesday. And here we did see, by particular favour, the body of Queen Katharine of Valois; and I had the upper part of her body in my hands, and I did kiss her mouth,^a reflecting upon it that I did kiss a Queene, and this was my birthday, thirty-six years old, that I did kiss a Queene. But here this man, who seems to understand well, tells me that that saying is not true that she was never buried, for she was buried; only, when Henry VII. built his chapel, she was taken up and laid in this wooden coffin; but I did there see that in it the body was buried in a leaden one, which remains under the body to this day." Fuller, in his *Church History*, book iv. thus alludes to the tradition of the cause of Queen Katharine having never been buried: "Her body lies at this day unburied in a loose coffin at Westminster, lately showed to such as desire it, and there dependeth a story thereon. There was an old prophesie among the English (observed by foreigners to be the greatest prophesy-mongers, and whilst the Devil knows their diet they shall never want a dish to please the palate) that an English Prince, born at Windsor, should be unfortunate in losing what his father had acquired. Whereupon King Henry forbade Queen Katharine, big with childe, to be delivered there, who out of the corrupt principle, 'Nitimur in vetitum,' and affecting her father before her husband, was there brought to bed of King Henry VI., in whose reign the fair victories woven by his father's valour were by cowardice, carelessness, and contentions, unraveled to nothing. Report, the greatest (though not the truest) author, avoucheth that sensible of her fault in disobeying her husband it was her own desire and pleasure that her body should never be buried. If so, it is pity but that woman (especially a Queen) should have her will therein, whose dust doth preach a sermon of duty to feminine, and of mortality to all, beholders. But this story is told otherwise by other authors, namely, that she was buried near her husband, King Henry V. under a fair tombe, where she had a large epitaph, and continued in her grave some years, until King Henry VII., laying the foundation of a new chapel, caused her corps to be taken up; but why her great-grandchild^b did not order it to be re-interred is not recorded. If done by casualty and neglect very strange, and stranger if out of design."

In 1681 Keepe writes, "On the south side of this tomb (of Henry V.) is a

^a "You have witchcraft on your lips, Kate: there is more eloquence in a sugar touch of them than in the tongues of the French Council."—*Henry V.* act 5, scene 2.

^b Henry VIII.

wooden chest or coffin, wherein part of the skeleton and parched body of Katharine Valois, from the waist upwards, is to be seen, of whom many fabulous stories are reported for her lying here; but the truth is that when Henry VII. caused the old chapel of Our Lady (at the entrance^a whereof this Queen was interred) to be pulled down, the workmen finding her coffin among others to be well nigh perished and decayed, what remained of her body was taken then and placed in this capsula nigh her husband, where it hath continued ever since, which is not frequently shown to any but as an especial favour by some of the chief officers of the church."^b

In 1711 Crull records, "Part of her skeleton is still to be seen in a wooden chest standing on the south side of her husband's monument." Dart writes in 1723, "Her body was taken up, and the coffin being decayed it was put in a wooden chest and placed near her husband's tomb at the east end of the Fryers, where it has ever since continued to be seen, the bones being firmly united and thinly clothed with flesh like scrapings of tanned leather, a view fit to represent to us the end of beauty, greatness, and what else sublunary things we boast."^c

Noorthouck, in his *History of London*, published in 1773, mentions "That near the tomb of Henry V. lie the remains of Katharine, his consort, in a wooden chest."

Gough, in his *Sepulchral Monuments*,^d states that when the Queen's body was taken up "the coffin being decayed was put into a wooden chest and placed near her husband's tomb at the east end of the Fryers, where it continued ever since, the bones firmly united and the flesh and skin dried up like tanned leather. Of late years the Westminster scholars amused themselves with tearing it to pieces; and one in particular, who bore a principal character in the police of India, lies under the imputation of having contributed in an especial manner to that havoc. I can just remember seeing some shapeless mass of the mummy of a whitish colour. It is now under lock and key near her husband's tomb, waiting for the next opening of the royal vault^e for her last repose."

So it lay till the time of Dean Thomas, when, according to Neale, in 1776, (the year of the death and funeral of the first Duchess of Northumberland, when the Percy vault was constructed in the chapel of St. Nicholas,) the opportunity was taken of placing the coffin of Queen Katharine out of sight in the adjacent vault of Sir George Villiers and his wife the Countess of Buckingham. There, from

^a Query "entrance." See Ashby's deposition, *ante*, p. 283.

^b Keepe, p. 155.

^c Dart, ii. 39.

^d Gough, ii. 115.

^e George II.'s vault was then the royal vault.

Neale's statement, it was believed to be, but, as the vault could only be reached through that of the Percies, no access could be had to the coffin of the Queen, and there was no absolute certainty as to the possibility of finding or verifying it.

It was within a few days after the determination to take the first opportunity of inspecting this temporary place of sepulture that the occasion was furnished by the death of Lord Henry Percy. In accordance with the long prescriptive right of that illustrious house, the funeral took place in the family vault in the chapel of St. Nicholas on the 7th of December, 1877. At the same time the permission of Her Majesty the Queen for the removal of the remains of her royal ancestress to the chantry of King Henry V. was graciously accorded.

In the evening after the funeral, the Percy vault was entered, the wall of separation was found, and, when pierced with a hole sufficient to illuminate the Villiers' vault, there was seen resting on the top of a pile of coffins on the south side the box or chest which Neale had stated to be deposited there, and the first syllable of Queen Katharine's name was legible upon a leaden plate; the hole was then closed up and the discovery was communicated to the Dean.

Early on Saturday, the 8th of December, 1877, the Dean, Canon Farrar, and Mr. Doyne Bell, met in the chapel of St. Nicholas; the Percy vault was opened, and a portion of the wall of separation was removed, so as to allow a coffin to pass through the wall. This wall was found to be of the thickness of one brick, instead of three (as was shown on a plan of the Percy vault belonging to the Duke of Northumberland), so that the opening was made with great facility. Through this aperture there was visible the chest containing the remains of the Queen. It was lying on the south side, close to the south wall, and was immediately under the effigy of the Countess of Buckingham. The bare lead coffin on which it rested inclined over towards the south, and this subsidence had thrown the chest close up against the damp wall.* This contact had communicated so much moisture to the wooden chest that its substance was quite altered, and had become like a pulp of considerable softness, so that by its own weight it had broken into several pieces. The side which was away from the wall was less decayed, and maintained its form and substance; the edges of sheet-lead could be felt through the apertures of the wood.

It was at first feared that this rottenness of the wood would prevent the pos-

* This dampness was occasioned by the insufficient ventilation of the Villiers' vault. The vaults in the Abbey are usually remarkable for their dryness and good construction.

sibility of the chest being removed in an entire condition, and at the first attempt to raise it there was a sound like the breaking up of the whole mass; this was however found to be caused by the adhesion to the lead coffin beneath, and on striking the wooden bottom it appeared tolerably hard and sound. The chest being thus loosened from its resting-place was then tilted up slightly and a broad plank was gradually slid underneath it; this afforded a good strong bottom; an upright plank was then screwed on to the side, and this gave strength sufficient to enable the chest to be removed. Two of the attendants were then able to move it gently and lift it along through the Percy vault, so that it could be raised and passed out on to the floor of the chapel above. This operation took some time, and required extreme caution, as the space was very limited, the openings were narrow, and it was necessary that the chest should be kept in a horizontal position in consequence of its rotten condition. Being thus safely raised in its cradle, it was placed upon a stand which had been previously prepared. The rotten pieces of wood were gradually and gently lifted off, together with the one large piece to which a leaden inscription plate was attached, and the remains of Queen Katherine were then exposed to view. Mr. Bell proceeded at once to make an examination of the contents of the coffin, and Mr. George Scharf, to whom the Dean had telegraphed, arrived very shortly afterwards. The coffin was a rectangular box of elm plank, 4 feet 6 inches in length and 1 foot 8 inches in width, and about 1 foot in depth. Upon the box was fastened with four screws a leaden plate, 12 inches square, upon which was the following inscription:—

Katharine Valois,
Queen to King Henry V.
1437.
Deposited in this chapel
of St. Nicholas by Benjn. Fidoe,
Clerk of the Works
of Westminster Abbey,
1778.^a

Although great care had been used in lifting the box the lid had fallen into upwards of twenty fragments; and it was remarkable that, although when first seen lying in the Villiers' vault it appeared even when touched to be tolerably firm and sound in parts, yet in an hour or two after it had been raised the

^a This differs from Neale, ii. 89, who gives the date 1776. 1778 is correct, as it is the date when the Percy vault was completed.

action of the air seemed to produce a remarkable change in its substance, and it gradually fell to pieces.

It had been made out of rough elm-plank, which had not even been planed, as the timber merchant's marks were remaining upon it, and the box itself was merely nailed together in the roughest manner; the lid had been fastened down with six iron screws. Most probably it was not even prepared to contain the remains of the Queen, and had been previously used for some other purpose, as it appeared to have had hinges on one side, and the strip of lead on which the remains lay had evidently been curled round (independently of the effect of corrosion) and cut in order to make it fit into the box.

Very possibly when the Queen's remains were exhumed in 1502 her wooden coffin was found to have perished, but her body, being wrapped in thick cere-cloth, remained entire. A portion of the old lead from the roof of the Lady Chapel, which had been then just removed, was appropriated, after rough cutting, as a sheet on which to extend the body, which was then placed in a new chest by her husband's tomb, there to await its deposition in a more appropriate receptacle by some succeeding monarch.^a There, however, it remained until Benjamin Fidoë removed the first decaying and open chest, and then, by clumsy handling, shortened and distorted the body in order to place it in a chest measuring only 4 feet 6 inches in length.

The upper part of the body, as might have been surmised from the accounts of Pepys, Crull, Dart, Gough, &c. already quoted, was found to have been very much disturbed, and several portions are missing. Not more than half of the skull and only a few ribs and vertebræ remain; two bones of the right arm are also missing, but the lower portion of the body was very perfect. The legs were lying in an undisturbed condition; they had been wrapped in probably as many as twelve folds of cere-cloth, which had retained them in the same position as when the Queen was first buried; the left arm and hand were also quite perfect. Upon these limbs the skin and the muscles beneath were visible, and the latter became more defined as the moisture which had penetrated the chest became absorbed by exposure to the air. The leg-bones measured: femur, 1 foot 4 inches; tibia, 1 foot 2 inches; from which it may be concluded that the Queen was about

^a This strip of lead had never formed part of a complete inclosure of lead; it is and has always been a flat sheet of lead; its edges are cut jaggedly and irregularly, and there is a seam which runs longitudinally down the middle of it. This soldered seam throughout the full length of the sheet, $7\frac{1}{2}$ feet in length, may have been an original seam in the old lead, or it may have been made by joining together two strips of the old lead.

5 feet 6 inches to 5 feet 7 inches in height—a tall woman; she had also long arms. The form of the foot and ankle, which were small, seemed extremely graceful. The left knee-cap had fallen out of its place, but it is believed that this was only during the removal from the Percy vault.

The remains of the upper part of the body were few, and were found in a very irregular position. The skull was lying on the pelvis; the two scapulæ were identified, but only one rib-bone was to be found. An irregular mass, covered with dried skin, containing all the vertebræ of the neck, lay below the skull. The skull itself appeared to have suffered much injury, and had also been somewhat crushed by the corroded lead which had curled over upon it; it is small and well-formed; the lower and also the upper jaw were missing. The skull and some other bones showed signs of much corrosion, and bore evidence that lime had been thrown upon them; lime was also observed upon some fragments of skin and flesh.

At the upper end of the sheet of lead there was a thick cushion, upon which the head had originally rested. This was partly enveloped in the cere-cloth, and was formed of some coarse woollen-woven material, and had been covered with silk, some fragments of which still remained upon it.*

The clerk of the works had prepared some additional planking, which could be screwed on to the "cradle" without shaking it, thus forming a complete box. As soon as Mr. George Scharf had made some drawings of the remains this box was closed up, and at half-past 4 o'clock it was transferred to the chantry chapel of King Henry V.

Mr. Doyne Bell writes: "It was a striking and impressive scene, which I shall ever remember, and which at the time it was impossible to view without some feeling of emotion. The daylight had quite faded, and we were alone in the darkened Abbey. Two workmen took up the box containing the Queen's remains, and followed Mr. Poole and the clerk of the works; the latter, carrying in his hand one small lantern to light us, led the way out of St. Nicholas' chapel to the north side of the chantry chapel. Mr. George Scharf and myself followed, no one else was present, and we seemed unconsciously and silently to fall into a sort of processional order. I remarked to him 'We are attending the Queen's third funeral.' Not a word was said as we passed slowly round the ambulatory in the darkness. My mind reverted to those gorgeous ceremonials in which during her lifetime this Queen had taken part within these same walls. Her own coronation by

* The only piece of any size that could be lifted up was taken out and presented to her Majesty the Queen.

Archbishop Chichele; the splendid funeral services celebrated over the body of her warrior husband; the coronation of her youthful son; and lastly her own funeral in the Lady Chapel. These I contrasted with the subsequent neglect and ill-treatment of her remains, until in 1778, when they had doubtless with little or no ceremony been placed in the vault where we had just found them.* We then passed up the turret-stair into the chantry, when the box was slung up and laid in front of the altar-table."

A new chest to receive the Queen's remains was now prepared. It is of English oak, one inch thick, the angles dovetailed, the top and bottom rebated to take the sides and ends; it is finely wrought and carefully finished. One side was left free, and this was taken out, so that on the 18th of December the leaden tray was slid into it without shaking a fragment of the remains which rested on it; the side was then fixed and screwed on firmly. Upon the lid was fastened the lead-plate of Benjamin Fidoe, and a new plate was also attached to it, bearing the following inscription: "The former chest, which for 99 years had decayed in the Villiers' vault in the chapel of St. Nicholas, was removed thence, and this new chest including the Royal remains, was, with the sanction of Queen Victoria, placed here in this chauntry of King Henry V. by Thomas Wright, clerk of works at Westminster Abbey, in the presence of Arthur Penrhyn Stanley, D.D., Dean of Westminster, A.D. 1878."

The altar-slab had been raised from the floor of the chantry, and placed in position against the wall. In order to arrange for its permanent fixing, and to complete the form of the altar-tomb, Sir Gilbert Scott suggested that the sides should be formed of three slabs of grey marble, the surface being smoothed but not polished, so that it should, when completed, somewhat resemble the tomb of King Edward I.

In order to place the chest completely under the altar-table it was necessary to withdraw a stone from the east wall, so as to form a recess, twelve inches in depth; this stone was then transferred to the front, and placed so as to serve for a support to the head of the chest, thus making the best possible use of it. A slab of slate was then inserted, the one end resting in the east wall and the other in a notch cut in this stone. Upon this slab were placed four small squares of marble, one inch in thickness, in order to prevent the contact of the entire surfaces of the

* The absence of the names of any of the higher officials of the Abbey upon the leaden coffin-plate seems to indicate that Benjamin Fidoe, the clerk of the works, undertook the removal without any of them being present.

wooden chest with the slate slab, and to allow for a free passage of air between them.

The three slabs of grey marble for the sides and front of the altar-tomb, which had been previously prepared, were brought into position. On the front slab was incised the following inscription—

Sub hac tabula
(altari olim hujusce sacelli)
diu prostrata, igne confrica,
requiescunt tandem,
varias post vices,
hic demum jussu Victoriae Reginae deposita,
ossa Catharinae de Valois,
Filiae Caroli Sexti, Franciae Regis,
Uxoris Henrici Quinti,
Matris Henrici Sexti,
Aviae Henrici Septimi.
Nata MCCCC. Coronata MCCCCXXI. Mortua MCCCCXXXVIII.

At the four corners of the front slab were carved within trefoils,—1, The arms of England; 2, The flaming cresset of Henry V.; 3, The white hart of Richard II.; 4, The swan crowned and chained of Henry IV.,—these three badges being repeated from those which are upon the cornice above the altar. A diaper pattern formed of the fleur-de-lys, and a cross within a lozenge, which is copied from the maniple on the brass effigy of John of Waltham, bishop of Salisbury, formed a border to the slab.

All was in readiness when, on the 29th of January, 1878, as recorded in the following memorandum in the Abbey records, the chest was raised to its resting-place under the altar-tomb:—

“The coffin was placed in the niche prepared for it by the clerk of the works and the master mason, in the presence of the dean, the chapter clerk, and Mr. Doyne Bell, at noon this morning, and the front altar-slab was finally closed over it in the presence of the dean at four o'clock this afternoon.”

The choice of this resting-place for Queen Katharine is, it is believed, in accordance with the requirement of the peculiar circumstances of the case.

The continuance of the remains in an obscure vault, unknown, unrecorded even in the register of the Abbey, was evidently unsuitable. If removed thence they might perhaps have been placed either in the royal vault of George II. or in the vacant space beside her husband. But the Georgian vault is so exclusively devoted to the princes of a later dynasty that there would have been an incon-

venience in the intrusion of the French princess ; and in the changed conditions of the Abbey the space by Henry V.'s tomb, where the body was formerly exposed, has become necessary for the thoroughfare of the vast crowds of visitors. There seemed, moreover, to be an incongruity in the creation at this late period of a new royal monument for one who departed four centuries ago. The spot where her remains now repose is beneath a venerable monument of ancient days, recently rescued from oblivion, and which else would have had no present use. Its selection is justified by the analogy of the burial of King Edward VI. beneath the ancient altar of Henry VII.'s chapel, and of his sister Queen Mary under the broken altars of the surrounding chapel. Queen Katharine rests in the chapel erected, if not by herself, at least under her auspices, to her husband's memory, and over the tomb to which she herself supplied the now mutilated effigy. Over her, tower on one side the trophies of the victory by which King Henry won her for his wife ; on the other side, the images which belong to the devotional feeling peculiar to his time ; in the centre, the group of the Annunciation, which gives the altar its name, flanked by the ancient Kings, probably Edward the Confessor, founder of the Abbey, and of Arthur, who by Henry V., and in his time, was brought forward as the ideal and typical King of Britain ; and on the two extremities St. George the patron saint of England, and St. Denys the patron saint of her native country, the outward and visible sign that her husband was the first sovereign of England who was also King of France. Here she rests in the midst of the royal sepulchres ; yet, in conformity with the obscurity into which she fell, withdrawn from them, after vicissitudes in death equal to her vicissitudes in life, midway between the older Plantagenets and the later Tudors,—the missing link which unites the earlier and the later history of England together. Wife of the fifth Henry, conqueror of Agincourt ; mother by him of the unfortunate sixth Henry, who inherited from her it may be her own father's insanity ; grandmother, by her Welsh husband, of the seventh Henry, by whose extraordinary family the English Church and nation were established on their present basis, and from whose children the present reigning family derives its hereditary right to the English Crown.

It is the latest royal tomb in the Abbey, and, though long delayed, it has been thought that the singular and romantic history of a French Princess and an English Queen should at length be brought to an honourable end. *Requiescat in pace.*

APPENDIX.

Report by GEORGE SCHARF, Esq., F.S.A., Keeper and Secretary to the National Portrait Gallery, upon first seeing the Remains.

The recently discovered remains of Queen Katharine of Valois have suffered extensively from damp, and are still quite moist and fragile. The exposed bones break under the slightest touch like wet sand that has caked. The muscles attached to the arms and legs are porous: but remain tough, and have a spongy elasticity.

The upper and lower limbs, owing to the removal of the vertebral column, and nearly all the ribs, have been brought side by side on the same level.

The blade-bones and collar-bones (only one of the latter visible) have been mixed up with the pelvis, and the left hand reaches to below the knees.

The front part of the skull appears to have crumbled entirely away, but the back part still rests on a silken cushion of rough texture. The styloid processes of the skull are singularly perfect, and quite hard to the touch.

Several rings of cartilage may be detected among the *débris* of wood, bone, and cere-cloth, which fill the bottom of the leaden receptacle.

GEORGE SCHARF,

Keeper and Secretary to the National Portrait Gallery.

10th December, 1877.

. It may be added, that, on again seeing these remains after the lapse of many days, I found their condition very much changed, owing in a great degree to the dry atmosphere to which they had been removed. The general colour had completely altered, the forms appeared more sharply defined, and the texture of the bones perfectly hardened.

G. S.

Report by CHARLES SANGSTER, Esq., M.R.C.S.

The bones, as I saw them, were lying on a sheet of lead, and inclosed in a wooden box.

The skull was lying on the left side, and the parts nearest the pillow or cushion had escaped the action of lime.

The right parietal, temporal, and right half of frontal bones, were entirely destroyed by lime

(leaving a large hole), and the bone, to the extent of an inch all round this opening, was in a crumbling condition, and gave way easily to the touch.

The features were scarcely discernible. The upper and lower jaws, nasal and (malar) bones, were absent; in fact, all the bones of the face were wanting. The rest of the skull was in good preservation, even the styloid processes being present, the left measuring an inch and a half; the right was broken. Immediately below the skull were the seven cervical and first dorsal vertebrae, all in position (the atlas and axis being perfect, but detached from the skull); then came first rib and the upper piece of sternum or breast-bone. All the other ribs were missing.

On the left of the skull was seen the left innominate bone (of the pelvis) in a good condition, wanting only the (raucus) of ischium and pubes, and lying on this bone was the upper half of left scapula (or ramus blade-bone), also the left humerus (or arm-bone) turned round with the elbow socket in front; the radius and ulna (or fore-arm) were perfect and in position, also presenting the back view; the carpus and metacarpus were perfect; the phalanges (or fingers) were absent.

The left femur (or thigh-bone) was seen lying by the side and internal to the humerus, the head of the bone being just external to the acetabulum of the innominate bone (or close to its original socket). This bone was perfect both in shape and position.

Tibia and fibula (or leg-bones) were attached to the lower end of the femur, lying in their original position. The foot was quite perfect, with the toes turned outwards, and entangled somewhat in cere-cloth.

The muscles of the calf were still attached to the bones, and assumed the form of dried strips of leather. The tendons passing under the inner ankle to the sole of the foot were quite perfect.

The left patella (or knee-cap) was lying just below the knee-joint on the outer side.

On the right of the skull was seen the right femur, the shaft of which was considerably destroyed by lime. Immediately internal to the femur was the right humerus, showing the back view, and internal to that was the right scapula, very perfect, and on the scapula was lying the right clavicle.

Below the humerus was the upper third of right ulna; the remainder of fore-arm and hand were missing. Tibia and fibula were *in situ*, and, like the left, had remnants of muscles attached to them.

The foot was disjointed, and the toes had all fallen apart.

Amongst the remains, not a single tooth was found.

Measurements of Long Bones.

Humerus, 1 foot $\frac{1}{2}$ inch; radius, $8\frac{3}{4}$ inches; ulna, $9\frac{1}{4}$ inches; femur, 1 foot 4 inches; tibia, 1 foot 2 inches.

Bones Missing.

Both superior and inferior maxillæ.
Right parietal and temporal bones.
Right half of frontal bone.
Both nasal and malar bones.
Left clavicle.
Sternum except the upper piece.

All the ribs except the first.

Lower half of left scapula.

Right radius and half of ulna.

Right carpus and metacarpus.

Eleven dorsal and all lumbar vertebrae.

Right innominate bone.

Sacrum and coccyx.

Right patella.

CHAS. SANGSTER, M.R.C.S., &c.

148, Lambeth Road, 30th January, 1878.

XIV.—*Edmund of Langley and his Tomb.* By JOHN EVANS, Esq., D.C.L.,
V.P., F.R.S.

Read March 21, 1878.

IN the month of November, 1877, in consequence of an alteration in the internal arrangements of the chancel of King's Langley church, it was determined to remove the altar-tomb of Edmund of Langley, Duke of York, from the position which it had held during the last three centuries in the chancel, to one in a new memorial chapel, constructed at the east end of the north aisle of the church.

The President of this Society was unfortunately unable to attend, but, in company with the architect in charge of the works, Mr. Joseph Clarke, F.S.A., the Rev. H. W. Hodgson the vicar, and others, I was present at the opening of the tomb. From observations made some years ago by Mr. Brandon it was reported to contain a leaden coffin, and was found in fact to do so; but, in addition, it proved to have deposited within it the greater part of two skeletons, not in coffins, but buried in loam and gravel, with which the tomb was filled up to the level of the plinth. The upper part contained rubble of Totternhoe stone. Before entering into any further details it will be well to give some short history of King's Langley, its royal palace and priory, from the church of which latter the tomb of Edmund of Langley was removed shortly after the Reformation, and erected in the parish church, to be again removed by nineteenth-century restorers.

When Domesday Book was compiled Langley had not attained to its royal prefix. It then formed part of the Terra Comitum Moriton, and was rated at one hide and a half. It contained two mills of sixteen shillings a year rent, sixteen carucates of arable land, and three of meadow, common of pasture for cattle, and wood to feed two hundred and forty hogs. It was valued at forty shillings by the year, though in the time of the Confessor it had been worth eight pounds. There is no mention of a priest, and no part of the existing parish church appears

to be of earlier date than the fourteenth century. An earlier building must however probably have existed.

Earl Morton, or, more properly speaking, Robert Earl of Cornwall, was a brother, by the mother's side, to William the Conqueror, and received large grants of lands in England, amounting in all to about nine hundred manors. His son William, not content with the Earldom of Cornwall and that of Moreton or Mortagne, in Normandy, claimed from Henry I. the Earldom of Kent, and being refused, raised a rebellion in Normandy. This led to the seizure by the king of all his possessions in England, and Langley thus became one of the royal manors.

In investigating its history care is requisite not to confound Child's, Chilterne, or King's Langley, with either Langley Marish in Buckinghamshire or Langley near Whichwood Forest in Oxfordshire, both of which were royal manors. Nor must King's Langley be confounded with the adjacent parish of Lees, or Abbot's Langley, which belonged to the abbey of St. Alban. There seems also to be a Langley in Yorkshire,^a where Richard II.^b placed three priests to pray for the soul of Sir Ralph de Stafford, eldest son of the Earl of Stafford, who had been murdered by the King's half-brother, John Holland; as well as Langley in Norfolk, where there was a religious house.

The abbey of St. Alban possessed, however, some little property in King's Langley, and, indeed, at different times laid claim to more. About the end of the eleventh century we find Paul,^c the fourteenth abbot, who had managed to recover several properties which had been alienated from the abbey, vainly endeavouring to regain a certain *vaccasterium* or dairy-farm at Childe Langley. The owner, whose name is not mentioned, may have been the Radulfus who held under Earl Morton, but whoever he was he was fortified by the royal favour. The name of the place, Childe Langley, which is probably the same as Chiltern, and possibly connected with the vicinity of the parish to the Chiltern Hills, is cited by the chronicler as confirming the right of the abbey to it, because the manor of Childwick, recovered by Paul, had received its name from its being

^a Dugdale places this Langley in Yorkshire, but the Rev. C. F. R. Palmer regards it as being King's Langley. This gentleman has, since my Paper was read, published three interesting articles on the Friars Preachers of King's Langley, in the nineteenth volume of the Reliquary, to which I would refer those who desire to know more of the history of this foundation. In revising my paper for the press I have ventured to make use of one or two of the details collected by Mr. Palmer.

^b Rot. Pat. i1 Ric. II. p. 1. Dugdale, Baron. vol. i. p. 162.

^c Walsingham, Gest. Abb. Mon. S. Alb. 1867, vol. i. p. 54.

devoted to the feeding of the younger monks, who lived on a milk diet—"ad alimenta monachorum juniorum lacticiniis alendorum, unde Childewica nuncupatur."

As already stated, the manor of Chiltern Langley came into the hands of Henry I., but it was not until the time of Henry III. that any royal seat is said to have been erected here, and for this I can find no other authority than that of Chauncy.^a

Local traditions, indeed, speak familiarly of King John's Palace, but in the Itinerary,^b which, with the exception of four years, enables us to say where this king was on any given day of his reign, there is no record of his having once visited Langley, though he may have passed through it on his way from Berkhamsted to Windsor on April 4, 1216.

There is a letter extant of Edward I.^c soliciting the prayers of the faithful on behalf of the soul of Alexander, King of Scotland, which concludes—"Teste meipso apud Langelegam xvij die Aprilis, anno regni nostro xiiij" (1286)," but it has been doubted whether this Langelega is not Langley near Colnbrook in Buckinghamshire, where the family of Edward is said to have spent seventeen weeks in the eighteenth year of his reign, 1290. The expenses of their sojourn are set forth in a paper in the *Archæologia*^d by the late Mr. Samuel Lysons, but his identification of the locality of the Langley mentioned in the accounts cannot be accepted as correct. One reason is, that many of the places from which various articles of consumption were procured seem nearer to King's Langley than to Langley in Bucks. For instance Isenhamsted or Chenies, to which place beer and wine, and other articles, were sent, is but little more than four miles from King's Langley, while it is twelve as the crow flies from Langley Marish. It is, however, true that there was a royal palace at Chenies, so that the sending might as reasonably be expected to take place from one Langley as the other. On the other hand the manor of Langley Marish does not appear to have come into possession of the Crown until the reign of Edward I., and it would not otherwise appear to have been a royal residence until the time of Henry VII., who granted it to his Queen.

Certain it is that four years after the date of these accounts, in 1294, the long sojourn of Edward's family at Langley and St. Albans caused great complaint in the neighbouring towns on account of the scarcity and dearness of provisions

^a Hist. of Herts, p. 543.

^b *Archæologia*, vol. XXII. p. 128.

^c Letters from Northern Registers, 1873, p. 85.

^d Vol. XV. p. 350.

caused by their consumption. The complaint is recorded in the *Annals of Dunstable*,^a and can only refer to King's Langley. The annalist says that in that year the market of Dunstable, and other markets, and the whole country round about, suffered from the long stay which Edward, the King's son, made at St. Albans and Langley, for two hundred dishes a-day were insufficient for his kitchen, and whatever he required for himself or his retinue he took without paying the price. His servants carried off all the victuals brought to market, and even cheese and eggs, and whatever was on sale, or was hidden in the townsmen's houses, and not for sale, and they hardly left any one even a tally. They took bread and beer from the bakers and brewsters, and if they had none they were compelled to make both bread and beer.

Again, in the year 1299 we find Edward I. and his second wife, Margaret of France, entertaining a large company at Langley. They were still almost in their honeymoon, having been married on the 12th of September (Sandford says the 8th), and on the 1st of November, All Saints Day, they had invited the Bishop of Norwich, the Abbot of St. Albans, the Count of Savoy, and not a few others, to Langley, where they celebrated the feast with all pomp, and the next day, that of All Souls, the King went to St. Albans, where he stayed but one night, and the next morning, after hearing the Mass of St. Alban, together with his nobles, he besought the blessing of the saint, and the daily prayers of all present, for his welfare on his journey to Scotland, on which he at once started.

In after-years King's Langley seems to have been a favourite residence with Edward II., and he it was who took the house of the Friars Preachers, which, according to Weever, had been founded by "Roger^b son of Robert Helle, an English baron," under his especial protection. As Tanner and Clutterbuck have pointed out, there is some mistake here on Weever's part, who, they think, has confounded the priory of the Friars Preachers here with the Præmonstratensian abbey of Langley, in Norfolk, a matrix of the seal of which was exhibited to this Society in 1833.^c

Chauncy also has fallen into an error in attributing the grants made by Edward II. in favour of this priory to his father Edward I. Tanner,^d however, speaks of Edward I. as one of the benefactors to the house.

Of Edward II. there are several Letters Patent relating to this foundation. One bears date 20th December in the second year of his reign (1308), by which he

^a *Annales Monast.* vol. iii. 1866, p. 393.

^c *Archæologia*, vol. XXV. p. 617.

^b Weever's *Fun. Mon.* p. 588.

^d Tanner, *Notitia Monast.* 1787.

gave it a garden on the south side of the parish church, with twenty-seven perches of land adjoining, and another is dated on the 28th March in the fifth year of his reign (1312). In the latter he says, that in pursuance of a vow, while in peril of death, he wishes to found in his park at Langley a house for the Friars Preachers for the daily celebration of mass for the soul of himself and those of his ancestors, towards which he grants them seven hundred marks.^a In other letters dated June 3, in his ninth year (1316), he grants to the brethren the manor house of Langley, the closes adjoining, together with the vesture of Chip-perville Wood for fuel and other necessities. The conventual church^b was consecrated by the Bishop of Bath and Wells in 1312. Edward II. appears to have been at Langley in the winter of 1314, as two letters dated from Langley on the 15th of December in that year are preserved in the cartulary of the monastery of St. Peter at Gloucester.^c Two others of this King's letters published in Rymer's *Fœdera*^d bear reference to Langley. They are dated in 1318 and 1319 and addressed to the Pope, and in them Edward proposes to found a house of Sisters of the Order of Friars Preachers, and states that he has sent brother Richard de Briton and Andrew de Aslakeby to make all necessary arrangements.

Another instance of the attachment of Edward II. to this spot is to be found in the fact of his having made the church of the Friars Preachers the last resting-place of his unfortunate favourite, Piers de Gaveston, Earl of Cornwall. The infatuation of the King towards so undeserving an object seems to have been unbounded, and no one reading his history can wonder at the counsel of the astute bystander at Warwick, who advised the nobles who had taken Gaveston prisoner that "it would be a great folly to take him to the King, and after having been at such charge and trouble to catch him to hazard the losing him again."^e He was in accordance with this counsel beheaded at Blacklow, near Warwick, in 1312, and his body was carried away by the Friars Preachers and kept at Oxford for more than two years, when the King ordered it to be translated to his manor of Langley and there to be honourably buried in the church of the Friars Preachers, whom Walsingham says he had there established to say masses for the soul of Piers and for those of his own royal ancestors.

^a Clutterbuck speaks of seventy only, but in error. See Clutterbuck's *Herts*, vol. i. p. 431.

^b Clutterbuck, vol. i. p. 432.

^c 1867, pp. 278, 279.

^d Vol. iii. 1727, pp. 709, 753.

^e Th. Walsingh. *Hist. Ang.* 1863, vol. i. p. 133. Dugdale's *Baronage*, vol. ii. p. 44. Joh. de Trokewe, *Ann.* 1866, p. 77.

The burial of Gaveston took place on the octave of St. John the Evangelist (January 3rd) 1315.^a The King, the Archbishop of Canterbury, four other bishops, and numerous abbots and ecclesiastics, were present; and, though it is said that but few nobles cared to attend, yet the Earls of Norfolk^b and Pembroke, the Lord Chancellor, the Lord Treasurer,^c the Mayor of London, about five barons and some fifty knights, did honour to the occasion.

Trokelowe relates that the body of Gaveston had been preserved with balsam and spices (*balsamo et aromate conditum*), and this pious care on the part of the brethren was, as already recorded, amply repaid by the King.

It seems in the highest degree probable that some monument was erected to his memory, but no trace of it now exists. The altar-tomb of the second Sir Ralph Verney,^d who died on the 6th of July, 1528, and was buried in King's Langley church, was, however, in former times popularly believed to be Gaveston's monument.

As to Edward himself, it need hardly be said that after his deposition in January 1326 he was murdered at Berkeley Castle, and his body buried without pomp in the abbey church of St. Peter at Gloucester, now the cathedral, where Edward III. erected a monument to his memory.

At the end of the reign of Edward II.^e the number of the friars was a hundred, but, owing to the retrenchment found necessary by his successor, Edward III. in April, 1327, fixed their number at thirteen only, which in 1337 was raised to twenty.^f

In the early part of the reign of this King the manor of King's Langley was granted for life to his mother, Isabella, for it is recorded that in the days of Richard de Wallingford,^g twenty-eighth abbot of St. Albans, 1326-35, he recovered by process against Queen Isabella, who held the manor of Langley by gift from the King, a rent of twenty shillings in respect of the mill of Ralph Chendut in Langley. In the Bill or Supplication this mill is called "le molyn du Petite Langele," and is said to have "come to be in the manor of our Lord the King as of the purchase of Alianor, formerly Queen of England, grandmother of our Lord

^a T. Walsingham, vol. i. p. 143. Rishanger, 1865, p. 432.

^b Dugdale's Baronage, p. 144.

^c Trokelowe, Annales, 1866, p. 88.

^d Verney Papers, Camden Soc. 1852, p. 48.

^e Reliquary, vol. xix. p. 76. Exit. Scac. 1 Ed. III. m. 1.

^f Exit. Scac. Pasch. 11 Ed. III. m. 5.

^g Walsingham, Gest. Abb. S. Albani, 1867, vol. ii. p. 266 *et seqq.*

the King that now is," and that the rent had been paid up to the third year of Edward II. Its value was found by a jury to be forty-six shillings and eight pence beyond the twenty shillings payable to the abbot, and an order was made upon Isabella for the payment of this latter sum in March, 1334. The mandate to the Exchequer for the arrears states that she held the mill for life by grant from the King, and presumably this was as part of the manor. It seems probable that this Little Langley has its modern representative in the hamlet of Hunton Bridge.

Isabella did not die until 1357, but on the 2nd of February, 1341, Edward III. was staying at Langley,^a as is shown by the date of a royal mandate, and in the summer of that same year, on the 5th of June,^b his Queen, Philippa, gave birth there to his fifth son, Edmund, who was hence distinguished as "of Langley." As Walsingham says, *Nominatus est autem puer, "Edmundus de Langleya."* The rejoicings at his birth were great, for Philippa's last child, Blanche de la Tour, had died an infant in the previous year, the same in which she was born. A tournament was held in honour of Edmund's birth,^c and the abbot of St. Albans, Michael de Mentmore, was summoned to celebrate the rite of baptism, John Earl of Warren, Richard Earl of Arundel, and the abbot himself, being the godfathers. Shortly afterwards the Queen herself visited St. Albans, and there at her churching offered a cloth of gold of great value.

The early days of Edmund were probably passed at Langley, where from time to time the Court resided. There is extant a letter of his father's respecting the bailiwick of the warren at St. Albans,^d dated from Langley, on March 30th, 1358; and in February, 1364, we find the abbot of Saint Albans^e extinguishing a corrody or claim for the maintenance of some servant or nominee of the King in the abbey, by the grant of certain lands in Abbot's Langley and King's Langley. In the Release mention is made of the park and of the lands of late inclosed by the King with palings, and some topographical details are given, which are perhaps of more interest to the local antiquary than to most of the Fellows of this Society. Nor was the house of the Friars Preachers neglected by Edward III.,^f who, in testimony of his affection to the foundation of his royal

^a Walsingham, *Gest. Abb. S. Alb.* vol. ii. p. 334.

^b Walsingham, *Hist. Ang.* vol. i. p. 253. Ypodigma Neust. p. 281. *Chron. Ang.* 1874, p. 12.

^c Walsingham, *Gest. Abb. Mon. S. Alb.* vol. ii. pp. 366, 379.

^d *Op. cit.* vol. iii. p. 101.

^e *Op. cit.* vol. iii. p. 113.

^f Rot. Pat. 51 Ed. III. "unum ciphum de mazer vocat' le Edward."

father, gave them a mazer-cup called Edward, and thirty-nine other mazer-cups, with a particular injunction that they should never be alienated from this house.

In 1358^a Edward III. had already granted to the prior of the Friars of Childerlangley a right of way through his park at that place, and in 1366^b he had endowed the rectors of Chilternelangle with ten marks in perpetuity issuing out of his royal manor.

In 1360, also, he had relieved the prior and brethren from certain repairs. Moreover in his will^c he directs that a certain house and buildings should be constructed "in the convent of the Friars Preachers at Langeley, of our foundation," as had been arranged. He also provides for an addition of twenty persons to the convent, each with a stipend of ten marks a year, who are to pray "for our health while we live, and for our soul when we are withdrawn from this light," and for the soul of our dearest consort Philippa, of illustrious memory, late Queen of England, and for the good estate of our children who survive, and the souls of those that are defunct.

Edward of Angoulême,^d the eldest son of the Black Prince, died in Gascony in 1372, and is said to have been brought to England and to have been buried in this church.

To return to Edmund of Langley, son of Edward III. In 1359^e he accompanied his father and his three surviving elder brothers, Edward, Lionel, and John, to France, and after a victorious campaign, ending with the treaty of Chartres, returned with the French hostages to England in November, 1360. In 1362,^f Edmund, being twenty-one years of age, was created Earl of Cambridge, and was shortly afterwards made a knight of the garter. In the same year we find a marriage proposed for him with the widowed daughter and heiress of the Count of Flanders, which, however, was broken off by the influence of the French king in 1364.^g For an account of the various visits of Edmund to the scene of war in France the reader must be referred to the gossiping pages of Froissart. I must here content myself with mentioning only the more remarkable occurrences of his by no means uneventful life.

^a Rot. Pat. 32 Ed. III. pt. 1.

^b Rot. Pat. 40 Ed. III. pt. 1.

^c Nichols's Royal Wills, p. 60.

^d Reliquary, vol. xix. p. 211. Rot. Pat. 13 Ric. II. p. 3, m. 28.

^e Froissart, 1857, vol. i. pp. 269, 291.

^f Walsingham, Hist. Ang. vol. i. p. 297. Ypod. Neust. p. 307. Sandford, Geneal. Hist. p. 375.

^g Ypod. Neust. p. 309. Hist. Ang. vol. i. p. 301.

In 1372,^a with his elder brother, John of Gaunt, Duke of Lancaster, he returned to England from Gascony, and they brought with them the two daughters of Pedro the Cruel, King of Castille and Leon, of whom John had married the elder, Constance, in 1369, and Edmund took to wife Isabel, the younger, of whom I shall have more to say shortly, soon after his arrival in England. In 1374 he was joined with his brother, the Duke of Lancaster, in the lieutenancy of France; in 1376 he was appointed Constable of Dover Castle and Warden of the Cinque Ports; and on the death of Edward III. in 1377, he, in company with the Duke of Lancaster, and other lords spiritual and temporal, was named as one of the commissioners for managing the affairs of the realm during the minority of his nephew, Richard II., then about eleven years of age. In 1381 he proceeded at the head of an army to Portugal, in aid of his brother John against the King of Castille. He was accompanied by his wife and eldest son, who though under ten years of age was betrothed to Beatrice, an equally youthful daughter of the King of Portugal; and, as Froissart observes, "young as the married couple were they were both laid in the same bed."^b

According to Harding, Edmund was wounded in battle in this campaign:—

At which Battaill, Duke John of Gaunt indede
And his Brother Edmond then fought full sore
Were never twoo better Knightes then thei indede
That better faught upon a feld afore.
It was but grace that thei escaped thore
Thei putte theimselfes so far furth, ay in prees
That wounded were thei bothe full sore, no lees.

In 1385^c Edmund was created Duke of York, and in 1391^d we find him with the Duke of Lancaster sent in great state to Amiens to treat for a peace with the King of France. In 1394,^e and also in a later year during Richard II.'s absence in Ireland, he was appointed Custos of England, in which capacity he summoned a Parliament in London early in 1395. In 1399 he was appointed Regent for the third time, and appears to have been present at the abdication or deposition of his nephew, Richard, and at the coronation of his other nephew,

^a Ypod. Neust. p. 318. Coll. of a Lond. Citizen, Camd. Soc. 1876, p. 89.

^b Book ii. ch. 84.

^c Ypod. Neust. p. 342.

^d Froissart, book iv. ch. 36.

^e Walsingham, Hist. Ang. vol. ii. p. 216. Ypod. Neust. p. 368.

Henry IV. Though occasionally attending at Court, he seems after the death of Richard, in September, 1399, to have spent much of his time in retirement at Langley, where he died on August 1, 1402,^a and was buried near the body of his first wife, Isabel, who had died early in 1393. Later in the same year he had married Joan, daughter of Thomas Holand, Earl of Kent, who survived him. Before proceeding further with the history of Edmund of Langley and that of his wives, the first of whom at all events was buried at King's Langley, it will be well to trace the connection of Richard II. with the palace and priory, and continue the history of the two latter until the one passed out of royal possession and the other was suppressed.

Whether any of the youthful days of Richard II. were spent at Langley is uncertain; the first mention which I find of his being there is on April 18, 1389.

In 1392^b he kept Christmas here in a magnificent manner, his Queen, Anne, being present as well as four bishops, four earls, one duke (Edmund of York), several of the gentry, and fifteen ladies. In 1396^c he again kept Christmas at Langley, where he was joined by John of Gaunt, on his return from Aquitaine. In the few troubled years that followed, the King does not appear to have made any stay at Langley of sufficient importance to be recorded by the chroniclers. It will be remembered that it is in a garden at Langley that Shakspeare places the scene of Richard's Queen first hearing the report of her husband's downfall.^d It may perhaps be added that there is considerable poetical licence in this, as Richard's first wife Anne had been dead for some years, and his second wife Isabel of France was not above ten years of age, and was under the care of the Duchesses of Lancaster and Gloucester, never having lived with her husband. After the murder of Richard, in February 1400, at Pomfret Castle, his corpse, after being embalmed and exposed to view for three days in Saint Paul's, was brought to the church of the Friars Preachers at Langley, and there buried.^e The bishop of Chester, the abbots of St. Albans and of Waltham, performed the last offices, none of the nobility being present nor any crowd of people, nor, as Walsingham adds, was there any one to invite those who took part in the ceremony to a repast after their labours.

^a Trokelowe, *Ann. Hen. IV.* 1866, p. 344. Ypod. Neust. p. 395.

^b Walsingham, *Hist. Ang.* vol. ii. p. 204.

^c *Hist. Ang.* vol. ii. p. 219. Trokelowe, *Ann. Rich. II.* 1866, p. 188.

^d *Rich. II.* act iii. sc. 4.

^e Walsingham, *Hist. Ang.* vol. ii. p. 246.

His body, however, was not destined to repose for many years in the place of its burial, for in 1414 it was removed by Henry V. with great pomp to the abbey of Westminster,^a and there re-interred in the presence of the King, who founded a chantry to say mass weekly for his soul, and honoured his body with a noble monument.

Richard was thus, as Camden observes, "requited by way of amends with a brasen tombe for the losse of a kingdome."

At Langle byryde fryste, soo stode the cas,
Aftyr to Wymynster his body caryd was.^b

Or, as another poet has put it, "*Quomodo Rex Henricus Quintus Transtulit corpus Regis Ricardi Secundi à Langle ad Westmonasterium.*"^c

Inde sepultura Regis translata Ricardi
Solemni curâ per Regem fit Leopardi
A Langaleya corpus Regale levatur
Et cum Reginâ tunc in Westmynstre locatur

It may, in passing, be remarked that it was under Richard II. the poet Geoffrey Chaucer held the appointment of Clerk of the King's Works at the Palace of Westminster, the Tower of London, the Castles of Wallingford and Berkhamsted, as well as at various royal manors, including that of Childerelangley. The deed notifying the appointment of his successor, dated in 1391, mentions also "*logias nostras infra parcos nostros de Claryndon, Eltham, Childerelangley et Fekenham.*"^d This lodge at Langley was probably the building which stood within a moated square near the river, at a spot now known as Little London, where some years ago numerous encaustic tiles were dug up. The palings of the park in the time of Edward III. seem to have begun at the water of Gateseye, now the river Gade, in which however there is now no island. I had always regarded this name of Little London as a term of derision applied to the remains of a diminutive building, but I now find that the name is of considerable antiquity, and that we have here an instance of the survival of a local appellation by tradition, where of the building to which it was originally applied it may be said, "*etiam periere ruinæ.*"

In the Patent Rolls of the thirty-fourth year of Edward III. (1360) mention is made of the "*domos et edificia manerii de Childer Langele de Parvâ London.*"

^a *Op. cit.* p. 297. Wilh. Wyrcester Ann. 1864, vol. ii. pt. 11, p. 747.

^b Coll. of a Lond. Citizen, Camd. Soc. p. 53.

^c *Versus Rhythmici de H. V.*, 1858, p. 72.

^d *Archæologia*, vol. XXXIV. p. 45.

and in 1372,* "*Rex commisit Willelmo Streete, custodiam parci Regalis de Childern Langele et logii Regalis de Parvâ London in eodem parco,*" to hold the keepership for life at the daily wages of fourpence and a cask of Gascony wine once a year.

In the same year Henry de Maunnesfield was appointed clerk of the works, "*apud manerium Regale de Chilternlangeleye and Littellondon cum clausurâ parci ibidem.*"

Of the presence at Langley of Edward Duke of York, eldest son of Edmund, there is no record. Notwithstanding his attempted treason to Henry IV., which was revealed by his own father, he was, shortly after the death of Edmund, reinstated in the royal favour, and allowed to enjoy his patrimonial estate, of which a right to occupy the royal demesnes at Langley may be assumed to have formed part. He was killed at Agincourt in 1415, and was succeeded in his dignities by his nephew Richard, only son of Richard of Coningsburgh, Earl of Cambridge, the second son of Edmund of Langley, to whom not improbably any rights connected with this place descended.

In 1466^c King Edward IV. gave to Thomas Betts, prior of the priory of King's Langley, and his successors for ever, to hold in pure and perpetual alms, a certain park called Home Park, the Fryar's Wood with the same park, and other property. The bulk of the manor remained, however, in the Crown, and in 1528^d King Henry VIII. conferred it on Queen Katharine his consort for the term of her natural life. After her divorce he in like manner in 1534 granted the manor and its appurtenances to Queen Anna (Bullen), whom he had married towards the end of 1532. There is, however, no record of either of these unfortunate victims of the King's scrupulous conscience and unsettled affections ever having resided here, or even having visited the place.

I may notice that the first instance I have met with of the place being called King's Langley is in the Exchequer Rolls of the first year of Henry V. (1413), the Easter of which year the King spent at Langley.

Of the royal palace at King's Langley but little more can be said. With its demesnes it continued vested in the Crown until the middle of the seventeenth century.* James I. in 1610 gave to Prince Henry the park and chace thereto

^a Exch. Rolls, 46 Ed. III. Rot. 26. Rot. Pat. ejusd. anni.

^b Exch. Rolls. 46 Ed. III. Rot. 40.

^c Chauncy, Hist. of Herts, p. 545. Clutterbuck, vol. i. p. 432.

^d Chauncy says Henry VII. and speaks of Queen Katharine as his consort. I have given the date as 20 Hen. VIII.

* Clutterbuck, *l. c.* p. 433, where is also a survey of the park made in 1558.

belonging, and after his decease to Prince Charles. The latter, after he ascended the throne, conveyed the park—then estimated to contain six hundred and sixty-seven acres—to Sir Charles Morrison for a term of ninety-nine years, reserving a rent of 37*l.* 6*s.* 8*d.* per annum, and subsequently granted him the reversion in fee farm, through whom it came into the possession of the Earls of Essex, in whom also the fee farm rent eventually merged.

Of the palace itself the merest fragment remains, and Salmon,^a whose work was published in 1728, passes the palace over with the remark, "Here the rubbish of royalty exists." In Elizabeth's time, 1591, the gatehouse and part of the palace or manor-house seem to have been still standing. What little now remains is on the left of the road leading up the hill from the village, and can hardly be part of any of the principal buildings.

Returning to the priory, we hear of no more royal benefactions to it after the time of Edward IV., though both Henry IV.^b and Henry VI. granted ample confirmations of former endowments. At the dissolution of monasteries in 1538^c it was found to be in the enjoyment of larger revenues than any other house of Friars Preachers in England, being valued at 127*l.* 14*s.* 0½*d.*, or, as Dugdale says, 150*l.* 14*s.* 8*d.*

In 1557, under Philip and Mary, all the houses and the site of the priory were restored, according to Tanner, to a prioress and nuns, but in 1559 the whole reverted to Queen Elizabeth, who, in her sixteenth year, granted the site to Edward Grimston.^d Chauncy,^e however, says that the site was not disposed of until the time of James I., who settled it upon Edward Newport and another, reserving a yearly rent of 20*d.* He adds that it afterwards came into the possession of William Houlke and his heirs, who demolished the house and the buildings belonging to the same. Notwithstanding this demolition some portion of the building still remains, which goes by the name of King John's bakehouse, and probably formed part of the offices of the priory. This is engraved by Clutterbuck as the old palace.

In 1557^f it appears to have been in part dilapidated, as in that year six fadders of lead from the south aisle, and seven from the Lady Chapel and Revestiary, were taken for making the water conduit from Blackmore Park to Windsor Castle.

^a Hist. of Herts, p. 113.

^b Rot. Pat. 1 Hen. IV. pt. 2; 3 Hen. VI. pt. 1.

^c Tanner, Not. Mon. 1787.

^d Tanner, *ubi sup.*

^e Ants. of Herts, p. 545. See also Morden, Spec. Brit. ed. 1730, p. 1002.

^f Reliquary, vol. xix. p. 218. Ashmole MSS. No. 1125, fol. 70.

Of the church itself nothing remains above ground. In 1591 it was "ruinated," and some thirty-five years ago the greater part of its foundations were dug up, but I believe that no plan of the building exists, unless possibly our distinguished Fellow, Sir Gilbert Scott, now, alas! no more, who saw some of the foundations exposed, and was able to trace the cruciform outline of the church, may have preserved any notes upon the subject. At Mr. Betts's farm on Langley Hill may be seen the Purbeck marble base of one of the columns, and two others are re-erected in the garden of the house on Langley Hill now occupied by Mr. Lemon. The section of the column is square, with semi-circular shafts at the angles and in the middle of each side.

A field near the site of the priory is still known as the Friars' Wood. A notice and a woodcut of the seal of the priory, together with some observations on its connection with the priory at Dartford, will be found in the Proceedings of this Society.^a

To return to the more immediate subject of this paper. I have already mentioned that Isabel of Castille, the first wife of Edmund of Langley, died early in 1393. She had, by authority and special licence of her husband, declared her will^b on December 6, 1382, and thereby bequeathed her body to be buried wheresoever her husband and the King might appoint. On the day of her death a hundred trentals and a hundred sauters were to be said for her soul, and four priests, or one at least, were to sing for her by the space of four years. Upon the day of her burial her best horse was to be delivered for her mortuary. She bequeathed to the King her heart of pearls; to the Duke of Lancaster, a tablet of jasper, given her by the King of Armenia; to her son Edward, her crown, to remain to his heirs; to Constance le Despencer, her daughter, a fret of pearls; to the Duchess of Gloucester, her tablet of gold with images, and also her sauter with the arms of Northampton; and to the King the residue of her goods, in trust that he should allow his godson Richard, her younger son, an annuity of 500 marks for life, a trust which the King, out of the great respect he bore to her, accepted.

She was buried in the church of the Friars Preachers at Langley, where probably both she and her husband were residing at the time of her death.

Edmund of Langley in his will,^c bearing date November 25, 1400, makes touching mention of her. "*Primerement jeo estre et devise m'alme a Dieu qi la*

^a 2nd Ser. vol. vi. p. 400.

^b Dugdale's Barrenage, vol. ii. p. 155. Sandford's Geneal. Hist. p. 378.

^c Nichols's Royal Wills, p. 187.

fourma et a la benoite vierge Marie et a touz les seints et seintes de paradis. Et moun corps a giser a Langelee pres de ma tresame Isabele jadys ma compaigne qe Dieux assoille." He died, as already mentioned, on the 1st of August, 1402.^a "*Ubi spiravit, ibi expiravit*—Langley was the place of his birth and also of his death," and no doubt his desire of being laid by the side of his first wife, Isabel, was duly accomplished. As will subsequently be seen, there is very great probability of the monument now to be described having been erected in the lifetime of Edmund, and under his own superintendence. He had by his will appointed that two priests should be provided for the perpetual performance of Divine service for his soul and for the souls of all his lineage, and had arranged for the cost of his interment; but, unlike his brother the Black Prince, he left no special directions as to his monument—possibly because no such directions were in his case necessary, if one monument was to serve both for himself and his first wife.

This monument is an altar-tomb, which appears to have been originally decorated with twenty shields of arms, seven on each side and three at each end. At the time of its removal from the church of the Friars Preachers it was rebuilt against the north wall of the chancel of the parish church, and upon the then existing pavement of square glazed tiles, which were left undisturbed. Only a part of the tomb projected westward beyond the chancel wall, and the workmen who re-erected the tomb seem to have omitted to replace some parts of the monument, which, owing to the new position, were to be hidden from view. Two of the slabs, bearing shields which would have gone against the eastern wall, were placed on that part of the side of the tomb which projected beyond the north wall of the chancel, and the whole of the shields from one side of the tomb are wanting. It might have been thought that the tomb in its original position stood with a part of the side against a wall or pillar so that the complete number of shields never existed on that side, but the foliation of the alabaster slabs bearing the shields to be subsequently described is returned at one end of the tomb, and either the upper or the lower of the Purbeck mouldings extends over the whole length of the monument within about twenty inches.

Not only are several portions of one side and end of the monument wanting, but the upper slab of Purbeck marble which now covers it does not appear to have originally belonged to it, but to have been the altar-slab either of the parish church or of the Friars' church on the hill. Of the five consecration crosses,

^a Sandford's General Hist. p. 377.

only three remain, and that in the centre suggests that the original length of the slab must have been 10 feet, instead of 7 feet 3 inches as it is at present.

Though this upper slab, therefore, formed no part of the original tomb, another slab exists in the church, which may not improbably be that which was originally the top of the monument. This slab until the recent alterations in the church was placed below the Verney tomb, already mentioned, and at the time when this paper was read had not sufficiently attracted my attention. As has already been pointed out by Mr. Cussans,^a its dimensions are 7 feet 3 inches in length and 3 feet 3 inches in breadth, the dimensions of the tomb being about 6 feet 5 $\frac{1}{4}$ inches by 2 feet 5 $\frac{3}{4}$ inches. This slab would overhang 4 $\frac{5}{8}$ inches at both sides and ends, and "it is certainly more than a fortuitous coincidence that the proportions of the two should be identical to the eighth of an inch."

The slab has been incised for the insertion of a brass, the studs for retaining which are still in position. The figure has been that of a lady with tight sleeves, her hands on her breast, and her head resting on a square cushion, with a tassel at each corner, and must have closely resembled that of a lady of the Stourton family in Sawtry church, Huntingdonshire.^b

Mr. Cussans's theory is that at, or perhaps shortly before, the removal of the tomb from the old church the brass was stolen, and that when the tomb was brought to the present church those who had the charge of the work having at their disposal a smooth polished altar-slab, for which they had no use, laid it over the tomb in place of the defaced original, being also perhaps actuated by some lingering veneration for the old altar-stone.

The monument, which now stands north and south instead of east and west as formerly, has been carefully re-erected for the second time by Mr. Joseph Clarke, F.S.A., in a small chapel expressly built to contain it, at the east end of the north aisle of the church.

In this chapel, which has been constructed at the expense of Mr. Arthur H. Longman, of Shendish, the eastern window, with the arms of her present Majesty and those of most of her royal ancestors which appear upon the monument, has been contributed by the Queen.

The total height of the tomb is about 3 feet 10 inches, and it consists of the following members:—

1. A base, about 7 feet 4 $\frac{1}{2}$ inches long, and about 3 feet 4 $\frac{1}{2}$ inches wide, and 9 inches high, formed of Totternhoe or Caen stone, the upper surface bevelled where it projects beyond the course above.

^a History of Herts, Dacorum Hund. p. 206.

^b Boutell's Mon. Brasses, A.D. 1404.

2. A course of Purbeck marble, about 8 inches thick, with a bold beaded ogee moulding worked in it. This course is imperfect.

3. A course of alabaster, about 5 inches thick, the face ornamented with sunk quatrefoils, eighteen on the side and seven at each end. Part of this also is wanting at one end and one side.

4. Above this is another course of Purbeck marble, about $4\frac{1}{2}$ inches thick, forming a beaded ogee moulding. Part of this is also wanting.

5. Upon this rests the main body of the tomb, consisting of alabaster, 15 inches high, and divided on the side into seven eight-foiled compartments, and at the ends into three, which are ten-foiled. In the centre of each is a shield with armorial bearings, as subsequently described. The whole of one side is wanting. The dimensions of the tomb at this part are 6 feet $5\frac{3}{4}$ inches by 2 feet $5\frac{3}{4}$ inches.

6. Upon this rests the upper slab of Purbeck marble, about 5 inches thick, the lower $2\frac{3}{4}$ inches of which are chamfered off along one side and one end of the tomb, the other end and side being left rough. As already observed, this is not the original slab, but part of a former altar. The arms on the shields which still remain are as follows, beginning with the eastern shield on what is now the north end.

North End.

1st shield. A cross fleurie between five martlets—Edward the Confessor.

2nd „ France ancient and England quarterly—Richard II. ?

3rd „ Three crowns, two and one—St. Edmund.

Side.

1st shield. Double-headed eagle displayed—Wenceslaus, Emperor and King of Bohemia.

2nd „ France ancient and England quarterly, a label of three points—Edward Prince of Wales.

3rd „ As No. 2, but each point of the label charged with a canton—Lionel Duke of Clarence.

4th „ France ancient and England quarterly, a label of three points, each charged with as many torteaux, impaling Castille and Leon—Isabel of Castille, wife of Edmund of Langley, Duke of York.

5th „ As No. 2, but three torteaux on each point of the label—Edmund of Langley.

6th „ France ancient and England quarterly, within a bordure—Thomas Duke of Gloucester.

7th shield. France ancient and England quarterly, a label of five points, on the two on the dexter side three ermine spots, on the others as many fleurs-de-lis—Henry of Bolingbroke, Duke of Hereford, afterwards King Henry IV.

South End.

1st shield. Three lions passant guardant, within a bordure—Holland Earl of Kent.

2nd „ Three lions passant guardant, within a bordure, charged with fleurs-de-lis—Holland Duke of Exeter and Earl of Huntingdon.^a

3rd „ A lion rampant—Fitz-Alan Earl of Arundel, maternal grandfather of Joan de Holland.

Unfortunately the labels on most of the shields are so much rubbed that the differential charges upon them are now in most cases invisible. Slight protuberances can, however, be still felt at the spots where the cantons and roundels formerly existed, and there can be no doubt that the drawing made by Sandford^b in July 1664, from which I have filled in some details in the foregoing description, is correct. The fleur-de-lis on the bordure of the shield of Holand Duke of Exeter are perfectly preserved, owing to their having been protected by a coat of plaster.^c The only other shield on which these minute brisures can be distinguished is the seventh on the side, on which the ermine spots of Brittany, borne by John of Gaunt, the father of Henry of Bolingbroke, and the fleur-de-lis of Henry Duke of Lancaster, his maternal grandfather, may still be discerned on the label.^d

The presence of this shield upon the monument affords the strongest presumption of its having been erected before the accession of Henry IV. to the throne, and consequently during the lifetime of Edmund of Langley. Indeed, if it be true that the label with these particular brisures was in use by Henry only from February 3, 1399,^e until the 30th September following, that is to say, from the death of John of Gaunt until his own accession to the throne, this monument must have been erected within that period.

The late Mr. W. S. Walford, F.S.A., to whose kindness I am much indebted, called my attention to a roll of arms of the reign of Richard II. published by Willement in 1834, and which there appears reason for regarding as not being of

^a Engraved in Boutell's *Heraldry*, 2nd ed. p. 224, fig. 475.

^b *Geneal. Hist.* p. 377.

^c Engraved in Boutell's *Heraldry*, 2nd ed. pl. lxx. fig. 477a, p. 224.

^d Engraved in Boutell's *Heraldry*, 2nd ed. p. 228, fig. 486.

^e Boutell's *Heraldry*, 2nd ed. p. 218.

later date than 1397. In this roll the label of Henry Earl of Derby is described as charged in the same manner as that on this shield. Under any circumstances the arms thus differenced could hardly have been placed on the tomb after the accession of Henry to the crown.

Mr. Walford^a has also shown that in the early part of the life of Edmund the label on his shield was counter-compony, in allusion to much of the Warenne property having been granted to him, and has suggested that the *torteaux* which he subsequently adopted may have in some manner borne reference to his Castilian alliance. Menestrier attributes the *torteaux* to alliance with the house of Courtenay, and Nisbet to one with the ancient Earldom of Cornwall, both of which views Mr. Walford regards as erroneous. As to the connection with the Warren property, I may observe that the Warrens, Earls of Surrey, were at one time also Earls of Boulogne, the arms of which earldom are—Or, three *torteaux*.

Edmund had already been married to his second wife, Joan de Holand, in 1393, and the shields of arms on what is now the south end of the tomb bear reference to this alliance,—the arms of her father the Earl of Kent, her uncle the Duke of Exeter, and her maternal grandfather the Earl of Arundel, being represented.

The shields at the north end are such as might appear on any English royal tomb from the reign of Edward III. to that of Henry IV., while in the centre of the side are the arms of Edmund impaling those of his first wife, Isabel of Castille. On either side are shields of other members of the royal family, including those of Richard II.'s brother-in-law, the Emperor Wenceslaus, Edmund's own arms, and those of his three brothers—the Black Prince and the Dukes of Clarence and Gloucester, John Duke of Lancaster being represented by Henry of Bolingbroke. From the size of the tomb it can hardly have been intended to carry two recumbent figures on the upper slab, much less three, and this affords another argument for regarding the slab with the female figure as having formed the original top.

The erection of monuments during the lifetime of one of those whose deaths they were to commemorate was by no means of uncommon occurrence, and we can well imagine Edmund taking pleasure in erecting this costly monument to the memory of himself and his "*tres ame Isabele*," near whom, in accordance with his will, his body was to lie.

It was not every one who, like Edmund's elder brother, the Black Prince, could give minute directions in his will as to the character of his monument,

^a Arch. Inst. Jour. vol. vii. p. 165.

with the certainty of their being obeyed. Many a one seems to have followed the Roman example of erecting a monument *SIBI ET CONIVGI SVO* or to have acted like the Yorkshire Diogenes who records on his monument^a *SIBI VIVVS FECIT*.

We have a good contemporary example of the practice in a monument in Kellshull church, in this same county of Hertford.

Under the effigies of a man and woman in brass are the following lines :^b—

Here lyth the bones of Rychard Adane and Maryon his wyff
 God graunt her soules euerlasting lyff
 The whiche Rychard dyed————
 In the yere of our Lord m^ccccc^o.————
 The which Richard Adane as y yow say
 Leyd here thys stone, be hys lyff day,
 The yer of our Lord was thane truly
 m^ccccc^o fyve and thrytty.
 Man the behovethe ofte to have in mynde
 That thou geuest w^t thyn honde, that shalt thou fynde,
 For wommen ben slowful and chyl dren bey unkynde,
 Executors bey coveytous and kepe all that they fynde.
 For our bothe soules unto the Trinyte seyethe a paternoster for charite.

There are no badges or other heraldic devices on the monument of Edmund besides the shields. An engraving of the tomb from a drawing made in 1664 is given by Sandford.^c Another is published in the *Beauties of England and Wales*, and a third in a Paper on the Two Langleys, by the Rev. Richard Gee, published by the St. Albans Architectural and Archæological Society in 1853. Gough^d has described the monument, and says it is most likely that Edmund's body and that of his consort Isabel were left behind in the Friary church.

On the floor, near the tomb, are several encaustic tiles, which, like the tomb itself, have been brought from the church of the Friars Preachers, although in far more modern times. They are for the most part ornamented with geometrical designs, though the three lions of England appear upon some of them, in some cases occupying the whole field, in others confined within a shield. A fesse between two chevrons appears on another tile, but whether these are the arms of the Fitzwalters, or of some of the other old families which bore these ordinaries, I am unable to say.

^a Camden's Brit. Gough's ed. vol. iii. p. 242.

^b Clutterbuck's Herts, vol. iii. p. 538. Haines's Mon. Brasses, p. clxxx.

^c Sandford's Geneal. Hist. p. 377.

^d Sepulchral Monuments, vol. ii. p. 11.

The date at which the tomb was brought into the parish church is uncertain. If Tanner is correct as to the site of the priory having been granted to Edward Grimston in 1574, it seems probable that the removal may have taken place about that year, but no record of the event is chronicled in the parish register of the time, which is still in existence.

It is by no means improbable that the removal was made under direct orders from the Queen, for in the case of Edward^a and Richard, Dukes of York, the son and grandson of Edmund, both of whom were buried at Fotheringhay, we find that at the time of the destruction of the chancel of the church their bones, together with the body of Cecily Neville, Duchess of York, which was "lapped in lead," were removed and reburied by command of Elizabeth, though but a "meane monument of plaister wrought with the trowell," "very homely and farre unfitting so noble Princes," was erected over them.^b

I have at the outset stated that in the earth with which the lower part of the monument of Edmund of Langley was filled there was a leaden coffin, or rather a human body "lapped in lead," and the greater part of the remains of two human skeletons. Together with these bones were a considerable number of iron nails and some fragments of wood, so that possibly when first deposited within the monument they were encased in wooden chests.

I must now attempt to identify the occupants of the tomb, and attention will naturally be directed in the first instance to the leaden coffin. This had evidently been opened at the upper end for about half its length and resoldered, probably at the time of the first removal of the tomb. On again cutting open the lead and turning it back, a skeleton was exposed to view with every bone in position, from which the inference may be drawn that at the time of its being deposited within the monument the body must have been in a fair state of preservation, and that it had originally been embalmed or cased in some manner, though now, owing to the access of air and moisture from the outer wall of the church, through holes where the lead had decayed, almost all the fleshy part had disappeared. There still remained upon the head a considerable quantity of flaxen hair. No ornaments of any kind were visible. If any such had originally been placed within the leaden case they must have been removed when it was opened for the first time.

This body was not, as was originally expected, that of Edmund of Langley, but that of a young woman of about the age of thirty, as determined by Professor Rolleston, F.R.S., who obligingly came to King's Langley to examine the

^a Sandford's *Geneal. Hist.* p. 392.

^b Peacham's *Compleat Gentleman*, ed. 1634, p. 169.

remains, and whose report upon them I append. Judging mainly from the appearance of the teeth, I was at the time inclined to assign a somewhat less age, and to regard the remains as those of a lady of about five-and-twenty.

But whether the age was twenty-five or thirty this body cannot be that of Isabel of Castille, the first wife of Edmund, for, as she was born about 1355, and died in 1394, she must have been upon the verge of forty. I borrow this date of 1355 from Miss Emily S. Holt,^a but as Isabel was married early in 1372, and her eldest son appears to have been born in the following year, she may have been somewhat older.

Nor can the body well be that of Joan, the second wife of Edmund; she was the third or fourth child of Thomas Earl of Kent, who married in 1364, and she must therefore probably have been born before 1370, though Miss Holt gives 1383 as the date of her birth. If so, she was but ten years of age when she married Edmund of Langley in 1393, he being then in his fifty-third year. She died childless about 1434, after marrying three other successive husbands, and, apart from the improbability of her fourth husband sending her back to be buried alongside of her first, was at the lowest computation fifty-one years old when she died. Her second husband, whom she married in 1409,^b was William Lord Willoughby d'Eresby, her third, whom she married about 1410, was Henry Lord Scrope, and her fourth and last Henry Bromflet, Lord de Vesci.

Nor can it be Constance le Despencer, Countess of Gloucester, the only daughter of Edmund and Isabel, who was born about 1374, and died on the 28th November, 1416—though, being at that time in disgrace with the King, she did not receive honourable burial until 1420, when she was interred in Reading Abbey. It would be out of place here to enter into her eventful history. Suffice it to say that she cannot be the occupant of the leaden coffin. Not only was Constance buried elsewhere, but she was at her death at least ten years older than the occupant of the coffin.

It has struck me as possible that these remains may be those of Anne Mortimer, daughter of Roger Mortimer, Earl of March, first wife of Richard of Coningsburgh, Earl of Cambridge, the second son of Edmund of Langley. This is, however, the merest conjecture, as I can at present find no record of the exact date of her death nor of the place of her burial. She was, however, born on December 27, 1388,^c and is thought to have married in 1408. She certainly died some time before 1415, in the August of which year her husband was beheaded at Southampton. For at that time he was already married to his

^a The White Rose of Langley, Hist. App. p. 342.

^b Rot. Pat. 10 Hen. IV. pt. 2.

^c Dugdale's Baron. of Eng. vol. i. p. 151.

second wife, Maud, daughter of Thomas Lord Clifford, by whom he left no children. If Anne had died in 1413 or 1414 she would have been about twenty-five or twenty-six years of age, which would well correspond, according to my view, with the age of the occupant of the leaden coffin. Could it be proved that this was the body of Anne it would, if possible, enhance the interest attaching to this tomb, as not only was she the grandmother of Edward IV. but a great-great-grandchild of Edward III., of whom her husband was a grandchild only, and she therefore, like Edmund of Langley and Isabel of Castille, formed a direct link in the chain between the Norman William and our own beloved Queen. But, after all, I have no evidence of Anne Mortimer having been buried at Langley, and there may be evidence of her having been buried elsewhere.

Turning now to the bones which were laid along side of the coffin, the first point that will strike the ordinary observer is, that they were not themselves contained in any coffin, though possibly from the remains of wood and nails which were found with them they may have been contained in some wooden coffers or receptacles when placed within the monument.

The absence of a coffin may be due either to the corpse having been originally interred without any such protection, or to its having been merely of wood, which had decayed before the removal of the bones to their new resting-place. At the end of the twelfth century^a it was considered an innovation of Warren, the twentieth abbot of St. Albans, when he ordered the bodies of the monks to be in future buried in stone sepulchres, instead of being merely placed beneath the sod; but even then the general practice, from the abbots downwards, was to bury the bodies without any other covering than their usual attire.

So late as the time of Elizabeth it seems to have been the custom to bury in the ground with winding-sheets only.^b Both Henry I. and his daughter, the Empress Maud, were sewn up in bull or ox hides and thus buried; and even in later times it would appear as if many, even of the highest rank, were after death merely cased or wrapped in cere-cloth and then buried in their robes. Although Richard II. was encased in lead all but his face, yet in his will^c he provides that his body should, after royal fashion, be clothed in velvet or white satin, and also be thus interred with a gilt crown and sceptre, but without any gems, though on his finger he was to have a ring with a precious stone in it of the value of twenty marks. From the extremely interesting account of the

^a Matt. Paris, *Vita*, p. 95, ed. 1639. See Gough, *Sep. Mon.* vol. i. p. 51.

^b Hearne, *Spicii. ad Gul. Neubrig.* p. 796, quoted by Gough, *Sep. Mon.* p. 61.

^c Nichols's *Royal Wills*, p. 194.

opening of the tomb of Edward I. in Westminster Abbey, communicated to this Society by Sir Joseph Ayloffe, Bart., in 1774,^a it appears that the body of that King, wrapped in royal robes and with all the attributes of royalty, had been laid in a coffin cut out of a solid block of Purbeck marble, with a lid three inches thick, the upper surface of which was in contact with the covering slab of the altar-tomb. Such a coffin could not have been portable, and must be regarded rather in the light of a grave than of a coffin properly so called. The effigies which were carried in procession in so many of our royal funerals point to the time when the bodies of the deceased monarchs were themselves robed in a similar manner, and were carried openly before the people. That of Edward I. may have been made in order to be placed upon his altar-tomb, where, according to Langtoft,^b it must have lain for some time—

From Waltham before-said to Westmyster thei him brought,
Besides his fadre he is laid in a tomb well wrought,
Of marble is the stone, and purtreid there he lies.

In the case of Henry V., whose body was embalmed in France and inclosed in a leaden coffin, the effigy, which was made of cuir bouilli, was placed above the coffin, and did duty for the real corpse until both arrived at St. Paul's.

Oddly enough, in the re-interment of the descendants of Edmund at Fotheringhay, the bones only of Richard Duke of York and of his son the Earl of Rutland are recorded to have been taken up, but with them was the body of the Duchess Cecily,^c the wife of the former, which was lapped in lead.

In the tomb at Langley it is still uncertain who was the lady whose body was thus protected. Let us now see whether there is any better chance of identifying the two other persons whose bones were also in the tomb.

One of these, according to Professor Rolleston, is that of a woman about 4 feet 6 inches or 4 feet 8 inches in stature, and between thirty-five and forty-five years of age. Were it not for the condition of the skull Professor Rolleston would have assigned an age nearer thirty. So far, therefore, as age is concerned, these remains may well be those of Isabel of Castille, the first wife of Edmund of Langley, near whom he desired to be buried, and whose bones would in all probability have been removed from the Priory church at the same time as the tomb. Her age, as will be seen, was about thirty-eight.

^a *Archæologia*, vol. III. p. 376.

^b *Chron.* vol. ii. p. 341. Cited in *Archæologia*, vol. III. p. 386.

^c *Sandford's Geneal. Hist.* p. 392.

Isabel was the third daughter of Pedro, surnamed the Cruel, King of Castille and Leon, and is said to have been born at Morales or Tordesillas in 1355.^a When, in 1365, Pedro fled before his rebel brother from Seville to Bayonne, he was accompanied by his third wife, Juana, and his daughters Constance and Isabel. They did not return to Seville until 1368, after the victory of Navaréta, and in 1369 they were again removed to Bayonne, where, in the autumn of that year, they heard of the disastrous battle of Montiel, and of the violent death of their father.^b At that time John of Gaunt, who was then a widower, was staying in Bordeaux, and it being represented to him that it would be a charitable deed to comfort and advise damsels who were daughters of a king, especially when in such a pitiable state, and also that it would be a very noble match for him, as he or his heirs would be Kings of Castille, his pity and ambition consented, and he married the elder sister, Constance, without delay, at a village called Rochefort, between Bordeaux and Bayonne.

Isabel remained with her sister and accompanied her and her husband to England, arriving at Southampton soon after Michaelmas, 1371, whence they proceeded to Windsor, where they were received with great joy and feasting by Edward III. Early in 1372 Edmund of Langley, who had come with them from Bordeaux, followed the example of John of Gaunt, and married the second of the Spanish princesses. Isabel appears to have made him a devoted wife, accompanying him in his expedition to Portugal in 1381, where she remained until they returned together in 1382, in which year, as already mentioned, she declared her will. In her late years she seems to have suffered from want of money, having in October 1390 had 100*l.* given her, and shortly before her death, early in 1393, she had borrowed 400*l.* from her brother-in-law the Duke of Lancaster. Her jewels, however, appear to have sold for 666*l.* 13*s.* 4*d.*

In person she must have been small, and in her manners lively. Walsingham describes her as a "*mulier mollis et delicata sed in fine ut fertur satis paenitens et conversa.*" The well-formed slightly dolichocephalic skull in the tomb appeared to me such as when covered with flesh, skin, and hair, must have looked both intelligent and pleasing. There appeared some trace of embalmment upon the skull, and I think we may safely accept it as that of Isabel of Castille, whose bones are now again restored to the tomb under which she was originally buried in state, "for she was a king's daughter."

^a For many of these particulars I am indebted to Miss Emily S. Holt, "*The White Rose of Langley*," p. 342.

^b Froissart book i. chap. 301.

The peculiarities in the lower canine tooth, and in the humeri, mentioned by Professor Rolleston are somewhat remarkable. Of the whole of the jaws of every period, and of almost every variety of the human species, available in the ethnological series in the Oxford Museum for examination, only seven present bifid canine fangs, and only one belonged to a modern civilised race.^a In the same manner the humerus perforated in the olecranic fossa is now somewhat exceptional in Europe; it is only found in about 4 per cent. of the bodies in the Paris cemeteries, while in some burial-places of the neolithic age it occurs on 15 or even 25 per cent. of the arm-bones.^b It does not, I believe, occur in so large a proportion as even 4 per cent. in England, and it would be interesting to ascertain whether either of the peculiarities in the tooth or arm is more prevalent in Spain than in England.

It is, however, full time to turn to the last of the three persons whose remains were found in this tomb, and there can, I think, be little doubt that we have in the bones of the powerful man which lay outside the coffin those of Edmund of Langley, Duke of York. The age assigned to this man by Professor Rolleston is somewhere between fifty-five and sixty-five, and, as has already been seen, Edmund was in his sixty-second year at the time of his death in 1402. His height must have been about 5 feet 8 inches, and he must have been a man of a powerful frame, though, from what Professor Rolleston says, somewhat crippled in his latter days.

The appearance of the skull with its sloping forehead was not at first sight calculated to convey an impression of great mental power in the man who owned it; and, indeed, in the lifetime of Edmund there were those who regarded him as being "but of weak understanding;"^c but the many important posts which he filled, and filled with credit, prove that he must have possessed more ability than possibly his appearance might indicate. The slope of the forehead may however be correlated with the powerfully developed and heavy lower jaw, as Professor Rolleston^d has observed. Though less ambitious than John of Gaunt, and probably than the Duke of Gloucester, he possessed all the reckless bravery for which the sons of Edward III. were distinguished, and his hot-headed valour may not have contributed to improve his repute for understanding. In 1379,

^a Greenwell's British Barrows, p. 706.

^b Broca, Address to French Assoc. Journ. Anthropol. Inst. vol. vii. p. 198. See also Busk in Trans. Intern. Cong. of Preh. Arch. Norwich, 1868, p. 159.

^c Froissart, book iv. ch. 73.

^d Greenwell's British Barrows, p. 584.

when as Earl of Cambridge he was at the siege of St. Malo, with the French on one side and the English on the other of the tidal river, the two armies were day after day drawn up in battle array, each wishing the other to be taken at a disadvantage while crossing the river. At last the patience of Edmund was exhausted, and Froissart records^a that he declared with an oath that if these displays continued without any further advance made towards a battle he would engage the French himself, whatever might be the consequence, and actually dashed into the river, crying, "Let those who love me follow me, for I am going to engage." The Duke of Lancaster, looking on, observed to a Hainault squire, "Gerard, see how my brother ventures; he shows the French by his example his willingness for the combat, but they have no such inclination." The returning tide seems to have prevented the English engaging in the rash action to which Edmund tried to excite them.

At the siege of Limoges^b we find him singling out Sir Hugh de la Roche with whom to engage in single combat, while the Duke of Lancaster fought with Sir John de Villemur; and the Black Prince, who had just permitted the massacre of three thousand men, women, and children within the town, looked on from his carriage, and so much enjoyed the fight "that his heart was softened and his anger appeased."

But, however impetuous he may have been, Edmund was not wanting in natural shrewdness. Besides his device of the White Rose, which was destined afterwards to play such an important part in English history, he also, as Camden says,^c "bare for an Imprese a Faulcon in a fetterlocke, implying that hee was locked vp from all hope and possibility of the Kingdome, when his brethren beganne to aspire thereunto. Whereupon he asked on a time his sonnes, when he sawe them beholding this deuice set vp in a window, what was Latine for a fetter-locke? Whereat when the yong gentlemen studied, the father said, Well, if you cannot tell me, I will tell you: *Hic, hæc, hoc, taceatis*, as aduising them to be silent and quiet, and therewithall said, *Yet God knoweth what may come to passe hereafter*. This," adds Camden, "his great Grandchilde, King Edward the Fourth, reported, when hee commanded that his yonger sonne Richard Duke of Yorke should vse this device with the fetter-locke opened."

Whatever, too, may have been Edmund's weakness in some respects, this "loyal father of a treacherous son" showed a Roman fortitude in discovering

^a Book ii. chap. 18.

^b Froissart, book i. ch. 290.

^c Remains, ed. 1614, p. 215.

Aumerle's treason to Henry IV., an incident of which Shakspeare has made such effective use.

Altogether we may look back upon these bones as being the remains of one of England's worthies, who though "neither the father nor the grandfather^a of a king, nor one who derived any right in the Crown to his successors, yet had the blessing of the Patriarch, for kings descended from his loins, who from him as their source and original derived their appellation of Kings of England of the Royal House of York."

APPENDIX A.

ACCOUNT OF SKELETONS EXAMINED AT KING'S LANGLEY, NOVEMBER 22, 1877.

By Professor GEORGE ROLLESTON, M.D., F.R.S., F.S.A.

I examined three skeletons at King's Langley, November 22, 1877. Of these one was the skeleton of a powerful man, considerably past the middle period of life; a second was the skeleton of a woman, as far as I could judge, between thirty-five and forty years of age; the third had belonged to a younger woman, whose age, however, could not have been very far from thirty, and possibly on the wrong side of that year. The bones of the first two had got somewhat intermingled; those of the third had been kept safely apart from intermixture in a leaden coffin.

I. The skull belonging to the male skeleton had the sloping forehead, the vertical parieto-occipital region, the large processes for the insertion of muscles, the large mastoids, and the great weight so commonly observed in brachycephalic crania of powerful men. The line of the sagittal suture was beset with osseous up-growths, and there was only one *foramen emissarium*. The tendency to excessive ossificatory deposit was manifested even more strikingly by the glueing together of five of the lower dorsal vertebræ by a stalagmite-like effusion of bony matter on the anterior surfaces of their centra. One cervical vertebra had been similarly affected, some remarks on the nature of which *exostosis* may be found at pp. 695, *seq.* of "British Barrows." Some bony structures—consisting of a harder exterior shell, sometimes of a cylindrical shape, sometimes more flattened and rib-like, with irregularly-shaped masses in their interior, not unlike in form to masses of osteodentine, and connected with various parts of their inner periphery, but by no means filling it entirely up—were found mingled up with these bones, and I think they must have been irregularly ossified costal cartilages. There was one piece amongst them which looked like the lower end of a sternum, much compressed from side to side, with the facets for the reception of the mesial ends of the costal cartilages upon it, as well as portions of

^a Sandford's Geneal. Hist. p. 377

these still in relation with it. They had been, however, so much distorted that it is not quite possible to be sure on this point. The appearances, however, are very much such as might have been produced by wounds received in front, where wounds were usually received by Plantagenets, either in battle, or, as described in Chaucer's *Knight's Tale*, in tournaments.

But in spite of this abundance of bony deposit, or perhaps rather in correlation with the hampering *anchylosis* of the vertebræ, the bones of the limbs had their angles and muscular processes rounded and smoothed as though by atrophy and recoil from their former proportions. The girth of the shaft of the femur, immediately above the setting on of the condyles, was 6·8 inches, but the ridges for the muscles were very much smoothed down into the general contour of the bone. The chin and lower jaw were powerfully developed. The front teeth were small in size and crammed together, and many of the back teeth lost. Still the retention of the front teeth and the good development of the lower jaw and chin, coupled with the length and breadth of the facial region (for which see the appended measurements), must have given a commanding expression to the old man who owned this skull, unless the soft parts were considerably different from those usually found to clothe such a facial skeleton.

The age of the owner of this skeleton was somewhere between fifty-eight and sixty-five. I should not feel myself justified in adopting any less wide limit within which I should put the year of his death. He died a fine old man, an object of interest to his neighbours and friends, I make little doubt, and an object of some sympathy also, as the crippled condition of his later years must have formed a touching contrast to the strength and vigour which he certainly possessed, and possibly, or even judging from the bones alone probably, may have made strong and vigorous use of in his youth and manhood. It is possible to be exact as to the state of his teeth if it is not possible to be exact as to the year of his death; and as I suppose it is certain that he died before the discovery of America put potatoes at our disposal, and enabled us to substitute them, in part at least, for some other and harder articles of diet, it may be interesting to put this on record. In the lower jaw, then, three molars had been lost during life, two on one side and one on the other, and one pre-molar was carious. In the upper jaw the molars had been lost during life, and two pre-molars were carious. Many a man of sixty-five has as good set of teeth as this in the year 1877.

Twenty-two iron nails were mixed up with these bones, as were also some fragments of oak-wood.

A piece of coarse textile fabric, with some hair of a greyish-red in colour adhering to it, was also found with them.

Measurements of Male Skull and Bones found lying outside of Leaden Coffin.

Extreme length	6.7"	Lower jaw, interangular diameter	4.1"
Extreme breadth	5.8"	Width of ramus	1.5"
Vertical height	5.7"	Height of symphysis	1.45"
Absolute height	5.5"	Height from level of lower border to	
Minimum frontal width	3.9"	apex of coronoid, or to that of articular	
Maximum frontal width	5.2"	surface, which are nearly on same	
Frontal arc.	5.5"	level	3.2"
Parietal arc	5.2"	Circumference	20.9"
Occipital arc	4.2"	Basi-cranial axis	3.8"
Facial length	3.2"	Femur, length	18.8"
Facial breadth	5.2"	Tibia, ,,	14.8"
Basio-subnasal length	3.4"	Humerus, ,,	13.5"
Basio-alveolar line	3.5"	Clavicles, ,,	5.7"
Width of nose . . . . .	.95"	Girth of femur shaft just above condyles .	6.8"
Height of orbit	1.7"	Cephalic index: Length to breadth .	86
Width of orbit	1.6"	Stature	5' 8"

The bones are very large, but the muscular ridges are not very sharply marked.

II. The second skeleton, which was more or less mixed up with the first, belonged to a woman of from 4 feet 6 inches to 4 feet 8 inches in stature, and between thirty-five and forty-five years of age.

As regards the sex of the skeleton, the verticality of the forehead, the sharpness of the supra-orbital borders, and the absence of supra-ciliary ridges above them, together with the smallness of the mastoid processes and of the lower jaw, leave no doubt as to the skull; and we were more or less justified accordingly in assigning to it the trunk and limb-bones in this collection which bore a female character.

As regards the age of the skeleton, the skull sutures were nearly all entirely obliterated, all indeed more or less, except the squamous. The other sutures in the body were completely ankylosed, with the partial exception of the suture between the first and second vertebra of the sacrum, a suture, however, which does not normally become obliterated before thirty years of age, and which very readily becomes opened again by any posthumous maceration. In this case this suture was not open, but its position was indicated by a tumid line which skeletons of persons past middle life do not retain. The wisdom teeth were all present; of those in the upper jaw the one on the right side was apparently only just through the socket, whilst that on the other (left) side had a large cavity which had led to the covering of the fang and closure superiorly of the pulp cavity by periosteal deposit. The two lower jaw wisdom teeth were little worn, but the one on the right side would have wanted the full evolution of the corresponding tooth above to bring it under wear, and the decay of the left upper wisdom tooth would have prevented it from coming into play against the left lower. There was also some appearance of diseased action on the articular surface of the left half of the lower jaw, which renders the indications furnished by the teeth and

jaws somewhat less certain than they usually are. And it may be added as a confirmation of this that the right lower jaw canine presented the rare anomaly of a bifid root, for a discussion of which see "*British Barrows*," p. 707. Each humerus had the olecranic fossa perforated. This latter circumstance, coupled with the condition of the cranial sutures, inclines me to think that the real age of the owner of this skeleton was really somewhat greater than that (thirty, namely) which the condition of the sutures of the limb and trunk-bones by themselves necessitate us to accept.

The muscular ridges at the angle of the lower jaw are prominently marked, but the collar-bones are feeble and little curved, and we shall probably be right in thinking that the owner of this skeleton was a person of no very great muscular strength any more than of great stature, as the appended measurements show. Some dark-coloured substance, apparently mummified matter, was adherent to the skull in the right temporal fossa.

Measurements of Female Skull and Bones found lying at side of Leaden Coffin.

Extreme length	7.2"	Basio-subnasal length	3.25"
Extreme breadth	5.5"	Basio-alveolar line	3.5"
Vertical height	5.8"	Height of orbit	1.45"
Absolute height	5.6"	Width of orbit	1.47"
Minimum frontal width	3.5"	Width of nose . . . . .	.95"
Maximum frontal width	4.4"	Circumference	20.5"
Frontal arc	5.1"	Basi-cranial axis	3.7"
Parietal arc	5.4"	Femur length	15.9"
Occipital arc	4.6"	Tibia length	12.9"
Facial length	2.6"	Cephalic index: Length to breadth	76
Facial breadth (approx.)	4.4"	Stature	4' 10"

III. In a leaden coffin bearing marks of having been recently soldered up with as yet unoxidized lead, as found after again unsoldering it, was the skeleton of a woman of about thirty years of age, a little over, probably, rather than under that age, with some auburn hair still remaining, though detached from the skull.

As regards the sex, the indications furnished by the skeletal and cranial bones, both alike, were unmistakable; the clavicles were long and but little curved, the left measuring in a straight line from one end to the other 6 inches; whilst the other long bones furnished evidence equally or more than equally decisive to the same effect. In the skull, the sharp supra-orbital borders, and the slight development of the supra-ciliary ridges, together with the smallness of the mastoids, told in the same direction, as did also the unfavourable relation of height to breadth. The general outlines of the calvaria were globose, though the entire circumference was not great. The wisdom tooth was absent in the lower jaw on the left, and one pre-molar was similarly absent on the right side.

As regards the age, I considered the persistence of a trace of the ankylosis of the cristæ to the ilium to indicate that the age of the owner of the skeleton was about thirty, and I have a dim recollection, but not absolute certainty, that a considerable trace of the suture between the first

and second vertebra of the sacrum was still persistent. Certainly, I was clear at the time that this skeleton belonged to a person who had died younger than the owner of the other female skeleton examined here by me.

But unhappily I have not by me precise notes of the condition of any other bones besides those here mentioned and measured.

Measures of Skull and Bones in Leaden Coffin.

Extreme length	6·8"	Length of face	4·8"
Extreme breadth	5·35"	Orbital height	1·4"
Vertical height	5·5"	Orbital width	1·45"
Absolute height	5·3"	Width of nose	1·0"
Minimum frontal width	3·6"	Lower jaw (interangular diameter)	3·7"
Maximum frontal width	4·7"	Width of ramus	1·2"
Frontal arc	5·0"	Depth of chin	1·2"
Parietal arc	4·5"	Circumference of skull	19·7"
Occipital arc	4·5"	Femur length	18·2"
Facial length	2·7"	Tibia length	14·3"
Naso-frontal length	2·05"	Cephalic index : Length to breadth	78
Basi-cranial axis	3·8"	Stature	5' 6"
Basio-subnasal length	3·4"		

XV.—*Account of further Excavations at Silchester.* By the Rev. JAMES GERALD JOYCE, B.A., F.S.A., Rector of Stratfieldsaye and Rural Dean.

Read May 9, 1867.

ON May 18, 1865, I had the pleasure of reading to this Society a paper upon certain excavations which have been carried on at Silchester by His Grace the Duke of Wellington.^a Since that date the area uncovered has been considerably extended, and the excavations have attracted a very general interest among those who are skilled in English archæology. In addressing you at present, I only resume the thread of a statement already commenced, and, in order to clear the ground for the information I propose now to bring under your notice, I shall go back to a few leading particulars which were then stated.^b

The excavations, for distinctness and facility of reference, have been numbered under the name of blocks. Three blocks of Roman buildings were exposed at the date of my previous paper, two of them completely and one partially. These blocks of buildings were designated by the order of time in which they had been originally discovered, as Nos. I. II. and III. Nos. I. and III. were fully described, as well as the articles they contained. No. II. had been only partially uncovered, and the portions laid open up to that date had proved in some respects very unsatisfactory; in consequence of this only a cursory description was then supplied, in the hope that a more careful and more extensive search for other portions of the same structure would yield a more fruitful return, and this

^a Archæologia, vol. XL. pp. 403—416.

^b This communication and the next were returned to the Author, who intended to incorporate them together. Owing partly to bad health and his lamented death on June 28, 1878, this intention remained unfulfilled. The Society is indebted to his widow, the Hon. Mrs. Joyce, for preparing them for the press, together with the illustrations in the accompanying plates.

expectation has been amply fulfilled. To complete the description of Block II. will be the principal object of this statement.

In the early part of the year 1866 a fourth block was added to the three formerly excavated, but when compared with the others it has proved much less interesting. I shall dismiss this at once. The walls were traceable, though badly built; the rooms which were uncovered were sufficiently marked, but the floors gone except a few patches here and there, just enough to indicate the original level. The examination of this site, though uninteresting, was however pursued with some care, to the extent of laying open an area of 110 feet in length by 36 feet in width. The rooms opened were five in number, one having contained a small hypocaust; they were at the end of a gallery or corridor 90 feet long. A fragment of very poor mosaic was the only trophy discovered here to reward the search. Of this Block IV. a measured plan was made, but it may well be consigned to oblivion. Since then the excavation described already as Block I. has been filled in and the ground used for agriculture.

The excavation of a fifth and most important block of buildings has been commenced. This differs I believe in some essential points from any Roman edifice known in England, and possesses some points of extreme interest. It is beyond question the Ancient Forum of this curious city. It yet remains, ruined as it is, to this hour a conspicuous and significant memorial of that wonderful people who carried their own order and discipline to the ends of the world. I propose in this paper to complete, I might almost say to supply, the description of Block II. in detail, and to indicate some of the leading characteristics of Block V.

The Roman house which will chiefly occupy us at present is numbered as Block II.; it was discovered on November 7th, 1864, a few days after the first commencement of the works. The discovery was not accidental; the line of a small street, running at right angles with the great North Road, had been previously ascertained by prolonging the direction of the northern wall of the first house opened.

The point of intersection where this minor street cuts the great road across was ascertained, allowance was made for the width of the streets, and a corner house at each side was searched for, and both were found. The one we are now about to examine was the earlier discovered of these two, and, as it ultimately proved, by far the more important; to this therefore the name of Block II. was given, and to the other that of Block III. This latter has been already described in my previous paper, as its excavation was completed a long time before that of its opposite neighbour.

It should be borne in mind that this house stood at angles where two

streets crossed, or rather where a street crossed the main road. It was a mansion of extraordinary size for a Roman house, and it will appear particularly so if we remember that it stood in the heart of a town. Its importance is marked not alone by its dimensions but also by its nearness to the Forum. From the quoign of this mansion at its south-west corner the distance along the great North Road which it faced, to the quoign of the Forum at its north-west corner, was but 355 feet English measure, not quite 120 yards. There is little doubt that it was the great house next to that public edifice, for in this space there could scarcely have been any other private dwelling of equal size and consequence; the great London *Via* passed here between this mansion and the Forum, and in the same space (in this 120 yards) stood also a temple, or, if not a temple, certainly an altar and a precinct to the Hercules of the Segontiaci. This house in fact bore the same relation on the north to the point where the great *Viae* crossed each other that the Forum did on the south. These facts of course give a somewhat unusual interest to Block II., but the interest will be materially enhanced by an accurate acquaintance with the dwelling itself.

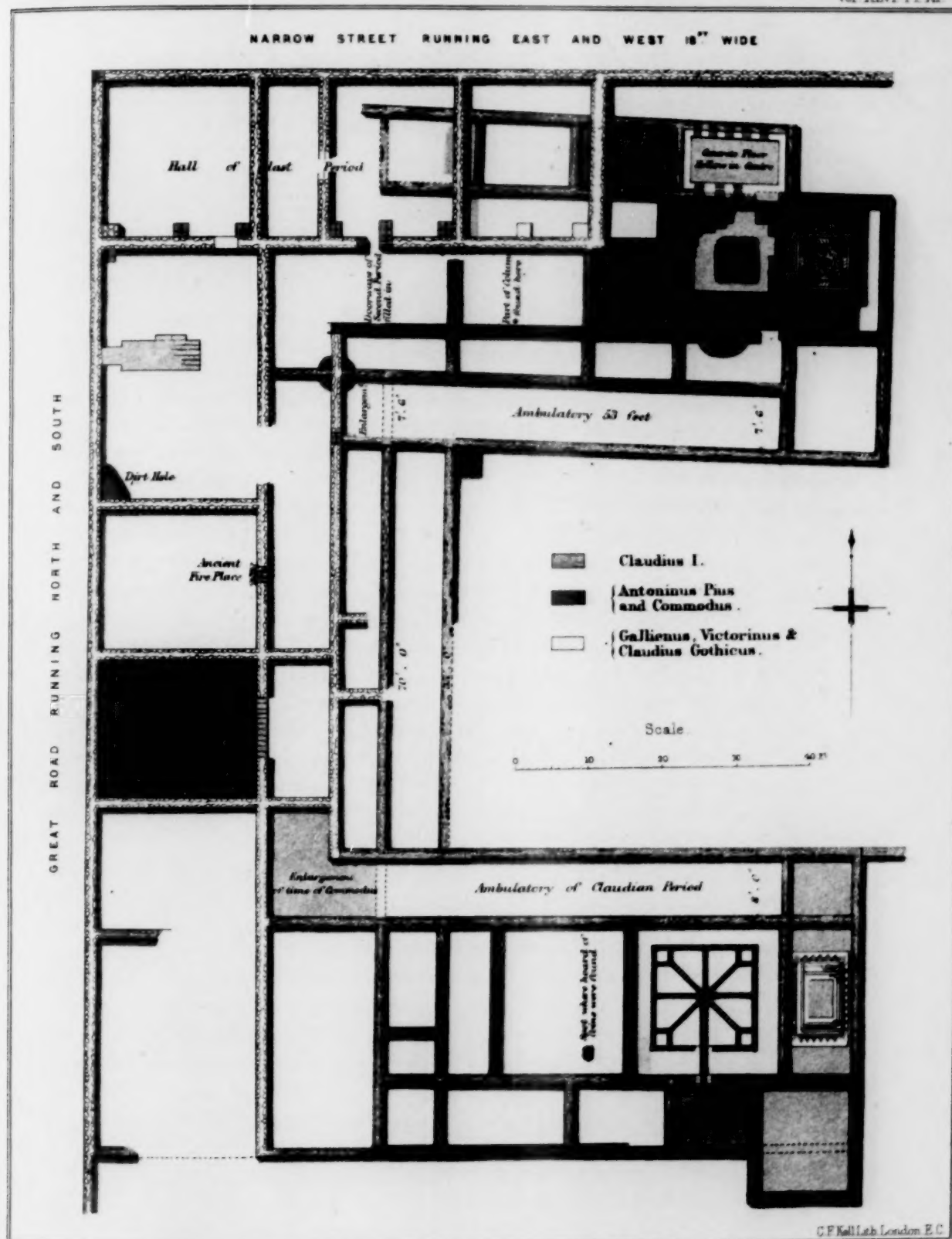
The general plan of this house has from time to time been enlarged, but it always remained throughout the same in arrangement. It has a certain resemblance to the houses of Pompeii, though not precisely agreeing with any of them. There is the same central quadrangular space, and the rooms disposed around it. The Pompeian houses have very seldom a *vestibulum* or recessed space between the street and the entrance, nor had this; they however generally had an *atrium* with its *impluvium* in the centre, but this feature (if it had a place at any stage of the existence of this dwelling) certainly cannot be traced now. It does not appear unlikely that the climate influenced the general arrangement of houses in this country; and possibly at Silchester, where houses were on a very lofty elevation of ground, and exposed to winter winds from many quarters, an *atrium* would have invited a greater amount of ventilation in the windows and chambers than would have conduced to either comfort or health. The nearest approach in general arrangement to the house now under consideration will be found perhaps in the celebrated villa of Woodchester. The quadrangle at Woodchester, which had the principal rooms disposed round three of its sides, is not unlike what I am describing.

The principal front of this mansion, thus placed along the great Northern Road 120 yards from the Forum, and hard by the precinct of Hercules, looked almost due west, and measured more than 150 feet in length. Another face looked north and extended along the minor street 108 feet.

To convey a clear idea of how this area was sub-divided will require a frequent reference to the plan. The endeavour to make plain what at first sight appears to be almost an incomprehensible complication of walls, enclosing very small spaces, will develop particulars which are some of the most interesting of those connected with the present excavation, if not with any other Roman excavation yet carried out in England. (Plate XI.) There was a time, about May 1865, when the work here was appearing very unsatisfactory; eight rooms lying close along the streets had then been exposed, the floors seemed to be particularly imperfect, with a solitary exception, in which the pavement, though complete, was of the most ordinary character; the workmen had dug along the walls down to the footings, and even in places several inches below the lowest course of masonry. They declared that no more was to be found here, that the remains had been exhausted, and there was nothing left to uncover. They formed this opinion on the fact that they had reached the lowest level at which the exterior walls were laid, and these walls appeared to leave off. They begged therefore to be allowed to move their tools elsewhere.

At this point in the history of this excavation I carefully examined all the portions of wall exposed, and on June 3rd the Journal of the work contains this entry. Referring to 25th May, 1865, "Examined the floor of the rooms there mentioned, traced along the edge of the walls, and, finding that the flint is there laid to a considerable depth below them, determined to have these small rooms searched more deeply before leaving this work. The result of that search proved within a very few days that there was a series of other walls a little below those we had laid bare, and the event ultimately was no less than the interesting discovery that we had beneath us the very perfect lines not of one but of three other successive houses, all erected on the same site, one above another, age after age."

I shall proceed now to give some idea, as far as the indication of existing remains admit, of the details of the type of house we are considering, and of the successive alterations it went through. I shall ask permission to take one liberty only in my description, and that is to treat each stage of this most interesting mansion as if it might be regarded to be of the date of the coins found in it. I am aware that strictly speaking such a deduction is incapable of proof, because coins may have been in circulation a long time subsequent to their original issue; but in absence of any other guide whatever I venture to assume that a coin may be esteemed sufficient index of a date, to be accepted where it is impossible that any other information can ever be accessible; and we shall thus be able, not



PLAN OF ROMAN HOUSE, BLOCK 2. SILCHESTER.

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merely to connect the house with specific periods of history, but also, by conferring distinctness upon each stage of its construction, to have a clear conception of the building as a whole.

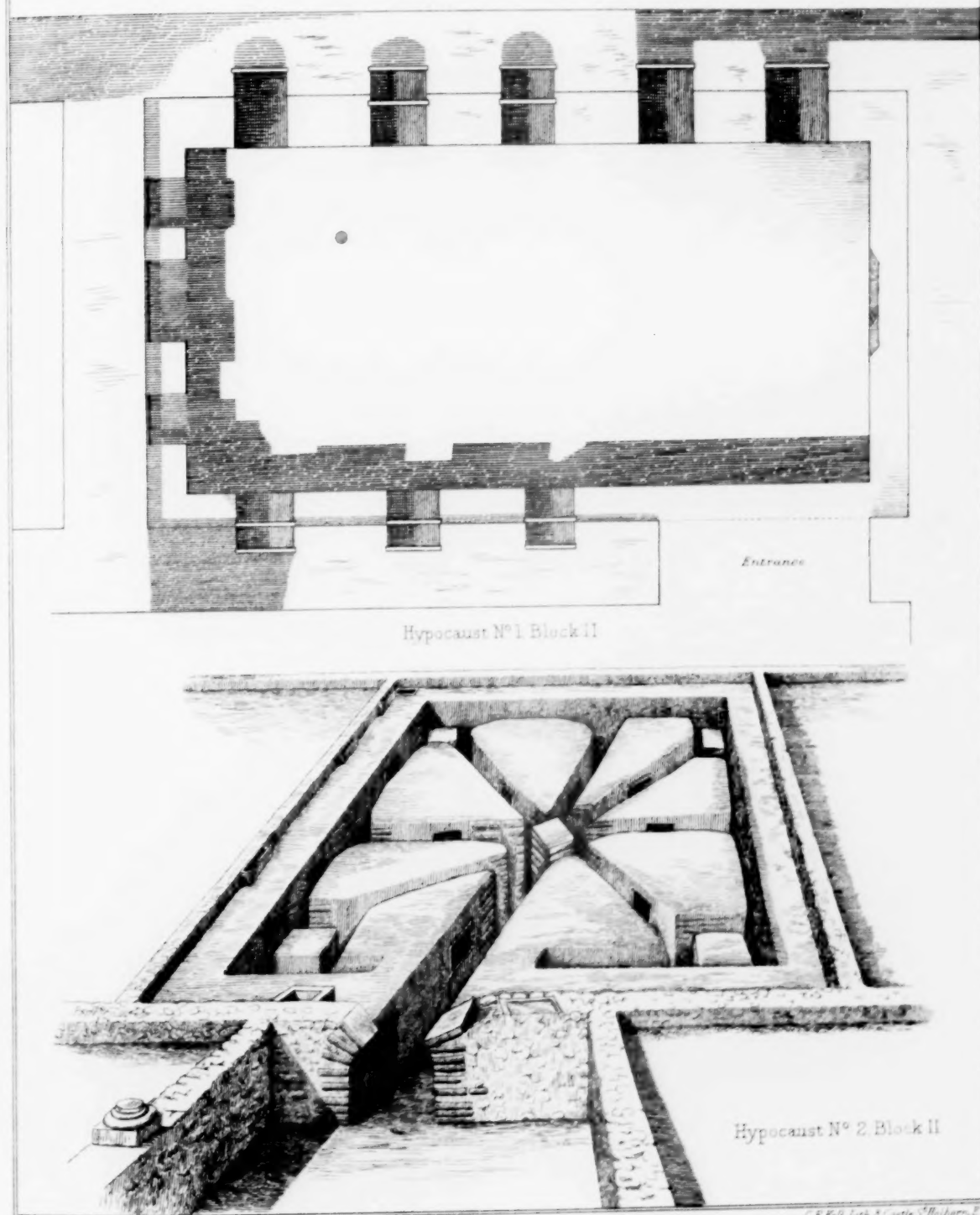
We will now endeavour to recover the traces still left us of the earliest condition of this structure. The date to which the oldest coin found within these walls will bring us is that of the Emperor Claudius, or, in other words, the very commencement of the Roman occupation. In a corner of one of the rooms on the west front the floor was found to be sunken, and on examination also soft. The contents were removed to a depth of about 6 feet. Apparently it had been a dirt-hole of one of the more ancient stages of construction; it contained loose materials, the rotten *débris* of a building, mortar, flints, wall-plaster, still bearing fresh colours, some fragments of iron, broken bits of ornaments of Kimmeridge clay, and among them a curious knife, and, lastly, a coin struck in honour of the then deceased Antonia, the celebrated sister of Marc Antony, the mother of the noble Germanicus. This coin appeared all but illegible, yet on a careful scrutiny it has been perfectly recognised, and its legend on both sides being well known from other examples may be identified though not read upon the coin itself. I am well aware how speculative it is to seem to attach any weight to evidence so slender as this, but my object, as I have already stated, is not to prove a theory but merely to approximate to a period. It is of little consequence to a ground-plan whether we assume the reign of Claudius, about the year of Christ 50, for the first erection, or that of Domitian, 40 years later, for which we can produce more authority; it will be admitted that such coins prove this residence in its primary condition to be of extremely ancient date. On reference to the plan of what we will call the Claudian period, it is important to state that every wall or portion of wall laid down actually exists, and no part is drawn from imagination; some of these walls have been erased, but their lowest course of flint or stone still remains where it was originally laid; and in places where the wall itself is even up-rooted from its very footing still the rammed gravel which formed the floors indicates, by a difference of colour and density, the lines which the walls followed. It is very curious and interesting also to observe that where later walls intersect these oldest, the courses of masonry are in several instances deflected from the level line and mount in a curve upward and then return again to their level so as to over-ride the erased portions. This is a very singular incidental proof that the erasure of these walls is so remotely ancient as to be long anterior to the days of Diocletian and Maximianus, as the evidence will presently prove beyond doubt.

The plan of this Claudian period includes, as here drawn, such an enlarge-

ment and alteration, which on the same principle for which your indulgence has been asked we may refer with a reasonable probability to the Emperor Commodus. I shall proceed in the first place to describe both the original and altered house, that of the period of Claudius the First and that of Commodus. The walls of the more ancient of these two series are more slender than those of the later, the former being generally only 15 inches thick and the latter 18 to 20 inches. The quadrangle or central space of the Claudian period was on the inside of its own walls 53 feet square. It was surrounded on three sides by the usual gallery or ambulatory, which is 7 ft. 6 in. wide on two of its lengths, and 8 feet on the other; the extreme extent of this gallery from north to south was 70 feet; the two ambulatories on the sides were each 54 feet, and at the end of one there is still remaining the same red pavement in its original position, which marks a little square room that terminated the gallery. It is curious to observe how the division wall was erased to lengthen the ambulatory at the end by taking in this room, but the first pavement still marks the dimensions of the apartment as 8 feet square.

Reference to the plan will now show how curiously symmetrical the arrangement was at first; the mind of the first designer is visible throughout. Taking the quadrangle in the centre to start from, you have on either side of it a rectangle quite regular in plan. The lines of the ambulatory supply the key to the sub-division of the two rectangles; from the rectangular area on the north a space or border of 7 ft. 6 in. wide was struck off all round, and formed on its outer sides, by sub-division, the smaller rooms, whilst its inner became the northern ambulatory. A similar method was taken on the southern side—the dimension used here was 8 feet; a border space, so to speak, 8 feet wide, was struck off round the rectangular area, and was then cut up into minor apartments. It is difficult at present to surmise how the central portion of each of the rectangles were disposed of; it seems probable, however, that in the middle of each of these rectangles there were three principal rooms. The dimensions thus determined, we have a range of small rooms on the outer side of the mansion along its northern face—to these I must call particular attention. This range of rooms is throughout 7 ft. 6 in. wide; two of them were 14 feet long, and two were 11 feet. In one of these rooms has been uncovered a very peculiar hypocaust (Plate XII. No. 1) which demands special notice; it is not exactly like any other with which Roman buildings in England have made us acquainted. I proceed to describe what is left of it. A hot-air chamber was formed here by removing the gravel to a depth of two feet; at the bottom of this a floor of very admirable pink concrete was laid; a dwarf inner wall was then built within this

SILCHESTER EXCAVATIONS.



Hypocaust N° 1. Block II

Entrance

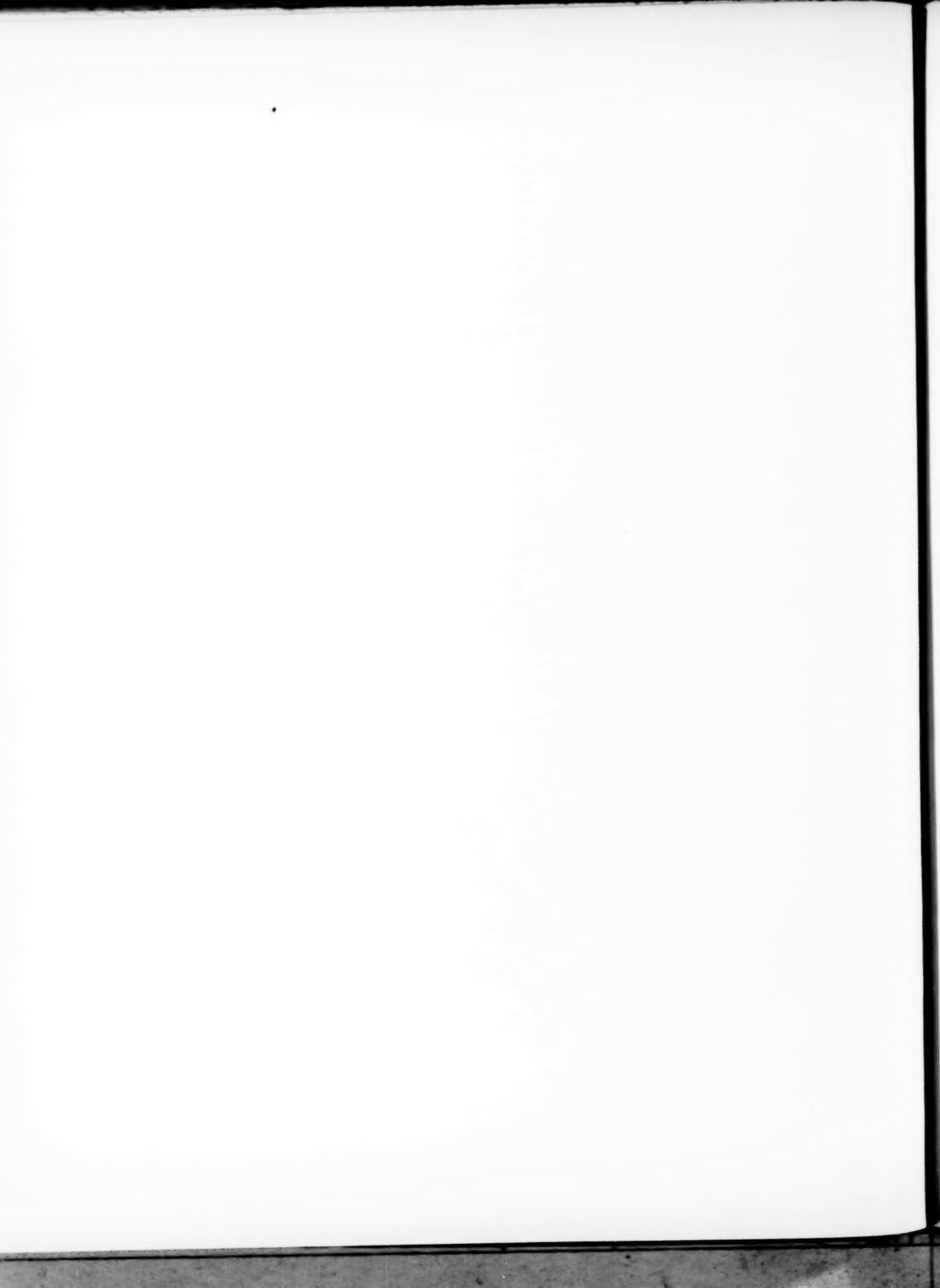
Hypocaust N° 2. Block II

J. G. Joyce, F.S.A.

C. F. Keble, Lith. & Cutler, S. H. Horn, P.

SILCHESTER.

Published by the Society of Antiquaries of London, 1881.



hot-air chamber as high as the floor level, so as to make a hip or shoulder all round to sustain the floor. In this dwarf wall a series of hot-air flues of large size were formed, being so constructed as to lead upward at an angle of 45° to the floor level, and thence to ascend in the thickness of the wall. A large flanged tile formed the inclined bottom of each air duct or chimney. These flues were in number probably ten, of which eight remain complete. The heat was driven in from each end, both the end walls having been perforated for a furnace mouth. What uprights sustained the floor there was no evidence to show; the floor itself consisted of enormous square tiles, the sides of which measured 2 feet and their thickness 4 inches. These tiles were of very great weight and admirably burnt; four, and a portion of a fifth, were left, the others had been taken away. This destruction however appeared rather like the filling-up of a disused portion of the building by later builders than the wreck of actual ruin. The *Journal* states, July 27, 1865, in reference to it: "The contents of the room were soft rubbish, chiefly the *débris* of mortar or plaster off walls; these fragments of wall-plaster exhibit signs of pattern-decorations, and are nearly as hard as the tiles themselves, but beneath the great tiles and on the bottom in places there lay a large deposit of burnt or jet-black oak fibre." The most suggestive fact, however, in reference to this singular hypocaust, is, that, although we discovered, in what had been the original sunk chamber for lighting the furnace on one side, the bed of wood-ashes used in its latest fires, we found at the same time that the builders of probably the third period of the mansion's history had carefully walled up the two furnaces, entirely stopping by a solid wall the places at each end through which the heat had entered, and proving beyond question that the room had been diverted from its original purpose long before the dwelling fell into decay.

The quantity of heat generated by such a room must have been most intense. It has been suggested that it was built for a vapour bath; that the thick tiles may have been excessively heated, and water then sprinkled or poured over to create hot vapour.

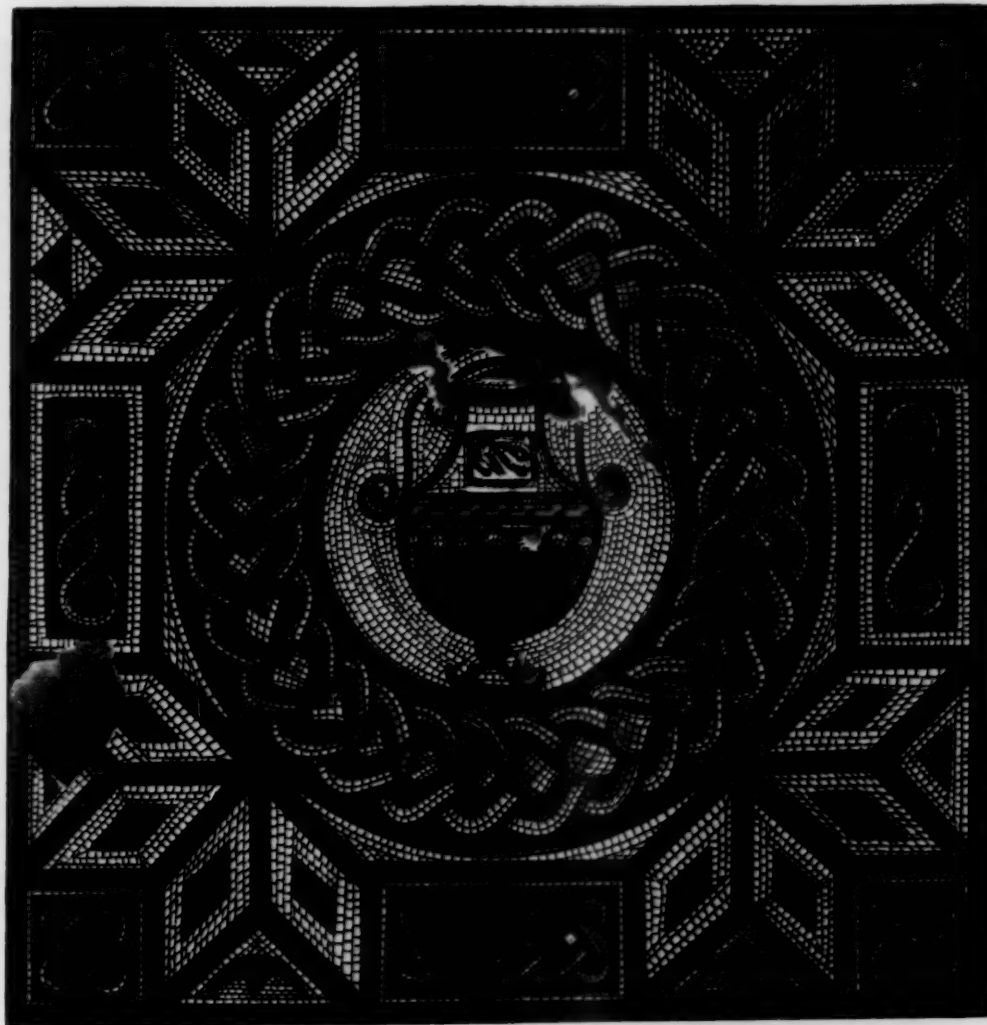
It has been at present covered with a shed in the hope of preserving it, and some drain tiles laid outside to drain off the water which rose in it in the winter.

The rooms on the southern side I pass over without remark except to mention that they underwent alteration in the second plan of this earlier construction, which I will point out immediately. What other rooms lay between the line of the ambulatory on the west, and the great street, it would be pure speculation to guess.

To the period of Commodus we will now advance for the next change; the

space of time so passed through may be roughly taken as a hundred years. By reference to the Journal of August 10, 1865, it appears that in clearing the ground on the western side of the original ambulatory the traces of the most ancient floor level were met with; to arrive at them we had already dug to below the footing of a later wall, three courses of which remained. Fifteen inches perpendicular of gravel below the lowest course of this masonry were dug through, and at that depth lay the level bed of concrete upon which the ancient floor had been laid; fifteen inches lower, that is to say, than the bottom of the wall. The tesserae had been swept away, but their marks were everywhere, and in one angle, protected by the remains of a course of masonry, six lines of common red tesserae, each about an inch square, were left in place. Lying here close by this wall, not the erased wall but another and newer one, was a coin of the Emperor Commodus. We may not be wrong therefore in attributing the alteration, in the process of which this coin must have been dropped here by a workman, to the date of 180 to 190 of the Christian era; certainly it could not be earlier, or no coin of Commodus could be there, and at that date the line of the ambulatory on the west was thrown forward, the ancient walls that bounded it on that face were removed, and only the mere traces of them left behind; certain other changes were carried out as the plan will indicate.

The extreme length of the ambulatory I have already given as 70 feet. Its sides were originally shorter by some 15 feet or more. These sides were now lengthened so that it measured each way the same length, 70 feet, upon its outer walls, being three sides of a square. To the same alteration of plan it seems most proper to refer several very important additions; the principal of these are the insertion of a large and well-constructed hypocaust, which remains comparatively perfect, and the introduction of two mosaics of excellent pattern, one of which almost in a perfect state was uncovered, raised, and removed to the hall of Stratfieldsaye House (Plate XIII). I will give the ground for assigning these to this date when they have been identified on the plan. The first step on reaching this is to observe the position of the mosaic on the north side. It will be at once apparent that this mosaic stood in a symmetrical position to the walls of the room where it was laid; it was very nearly if not quite in the middle of that room, and we must therefore conclude that when this mosaic centre-piece was laid down the walls occupied the position they do now; if they had not done so it would not, when we found it, have been central. To make that mosaic room the shape and size it is, it will be clear that the original plan was altered, and a square room, different in dimensions from any of the former apartments in this house, was



ROMAN PAVEMENT, SILCHESTER.

Published by the Society of Antiquaries of London, 1881.

W. GRIGGS, PHOTO-LITH. LONDON. S. E.

inserted in the eastern end of the north corridor. Now it is the grafting on of this room 16 feet square upon the first arrangement of the plan that makes out the very conditions under which this mosaic was placed. It could not have been placed in such a position in the ancient house under any circumstances. It is quite reasonable to conclude that these two rooms therefore were added to the original structure, and why the addition was not made later will be seen presently. Looking across now to the corresponding rooms on the opposite side we find a very similar change made, though not precisely the same. We find a square room inserted here also, very nearly the same in size, *i.e.* 16 feet, but at the south-east corner. The proof of alteration here is singularly evident. This addition has a floor of red tesserae, now imperfect, but of which a considerable part still remains. Where the wall of Claudian times ran, and still runs beneath this red floor, the level has remained at the same height at which it was first laid, but on each side of this line the ramming below the pavement has subsided in lapse of years, so that the floor has a kind of ridge crossing the room in the line of the ancient wall, still imbedded underneath. The mosaic in the adjoining floor has suffered a good deal from the plough, being only 5 inches below the surface; only two fragments of its end are left.^a The room appears to have been used as a kind of *exhedra* to the large *triclinium* close by, from which it was probably separated by a curtain alone. We have discovered nothing in the progress of our works hitherto which is more curiously worthy of attention than the room to which I am about now to invite your notice. In dimension it may be called 20 feet square; it is however a little less one way. Beneath the floor is a hypocaust (Plate XII. No. 2) of very ingenious construction, and we refer its insertion to this date, because the furnace-chamber of this hypocaust was evidently made at the same time as the square room with the red floor last spoken of. To form this hypocaust ducts or channels, 2 feet in depth, were cut in the figure of a Union Jack, leaving the banks of earth solid between. The sides of the banks were faced with stone or concrete, and the series of flues was arranged, first, in a circle round the centre (each triangular bank having a horizontal flue right through its narrow end, to make a circulation of heat), and then the hot air passed under the floor in embedded tiles to find its way out through eight ascending lines of flues in the walls of the apartment. One pillar in the centre supported the *suspensura*.

The slave who tended the fire must have gone down into the furnace-room on

^a The mosaic patterns are now placed in Stratfieldsaye House.

wooden steps, no trace of any others whether of stone or tiles being there. This hypocaust when first exposed in July 1866 was so complete that if floored over it might have been used again; it was carefully protected through the severe winter by being put under the shelter of a permanent wooden roof, but the water rose to a depth of near 2 feet within its ducts and furnace-room, and has a good deal shaken the ancient work.^a These changes of plan are all we can trace to the period of Commodus; those which followed altered not only the plan, but the position with respect to the cardinal points, of a large portion of the house. There are two later alterations, but they will be so evident that they need not detain us longer.

The next condition of this mansion I am disposed to refer to the date of Claudius Gothicus, because a very considerable number of his coins and of those of his predecessor Gallienus have been found, and frequently in positions where they might have been dropped by men at work upon the edifice. In the new arrangement a still further enlargement of the central quadrangle took place; the ambulatory had been already added to once, having been increased from a rectangle of 70 by 55 feet to a square of 70 feet measured on its outside walls. The addition made under Claudius Gothicus increased this dimension again, so that the inner walls of the ambulatory should now measure 70 feet, and this was effected by entirely altering the whole of the range of rooms upon the northern side of the edifice, and very probably those also which were on the west. In doing this the relation of the walls to the cardinal points was changed in all this new work, the ground-plan being as it were slightly canted round at the north-west corner more towards the south-west. It is not obvious why this was done, but the fact itself is very evident, and offers a ready means of distinguishing this work from all that existed previously. Although the ancient rooms of the south side of the house, and the original level of the floors, must have been preserved, it is plain that a very considerable rise of the floor line must have been made in the new parts. The older walls were not erased, but the surface was covered in with gravel and other filling to a depth of 12 or 14 inches. In this stage of the edifice several small ancient rooms were destroyed, and instead we find no less than six large and nearly square rooms disposed along the two sides which faced the public streets. One room, 20 feet square, was at the corner; two others, each 16 feet 6 inches by 20 feet, separated from the corner room by an entry or passage, stood along the line of the narrow street, and faced north; and three larger rooms,

^a Since this was penned drain-pipes have been put outside to drain off the water.

18 feet by 21 feet, were ranged along the great road, and faced west; there is an additional space provided in one of these three, and the tile-work base of some construction, which looks rather as if it had been part of the furnace of a tradesman. Such an arrangement as this is an unusual one in Roman houses of the villa type, but it has a parallel in the case of dwellings in cities, as in the *Casa della sonatrice*, and in the *Casa del fauno* at Pompeii, where the latter especially exemplifies it, being a house of the first class, but having four such rooms upon the street front. In the Pompeian houses these rooms were unquestionably shops, let out by the wealthy resident to tradesmen, and although it must remain uncertain that such was the case here, because we have nothing whatever to indicate what sort of occupant filled the rooms, it does not seem at all unlikely that they were employed, or even built, for some such purpose.

These walls were built with mortar. We arrive now at the latest stage, in which walls were constructed merely with flints laid in black mud. This last work is probably of the date of Constantius Chlorus, or perhaps more correctly the close of the reign of Diocletian and Maximianus: there is some slight ground for supposing that this interesting city may have been captured, and that much of it was destroyed and rebuilt about this date; certainly the work is very inferior, and bears indications of haste, although the scale is larger and the walls of greater width. Coins of the above Emperors have been found in the floors and in the broken masonry of the highest levels, as indeed have also those of almost all the later rulers of the imperial city.

The doorways in the rooms of the third building were walled up. Three instances of this are apparent. Plinths were erected in three of the rooms, to form the bases for columns, or possibly, in one instance, for pairs of columns, and in one case a plinth was built directly in front of a former doorway: clearly showing that these plinths were no part of that former plan. The impression which we formed, on first uncovering this portion of the building, was that it was one large hall, 46 feet by 20 feet, leading into an adjoining ante-room 16 feet 6 inches by 20 feet. That impression does not appear to me to have been incorrect, although on sinking lower we arrived underneath at three rooms and an entry, of the date of the third stage: it would seem probable that the outer lines were adopted, and the space enclosed by these four apartments was occupied in the latest form only by two. A broken pillar with mouldings of good character was found in one of these rooms, and subsequently a very debased reproduction of the same pattern of pillar, but barbarous in every feature, was discovered not far off.

It is important to state that in various places where the comparison can be made, it will be found that the lowest course of flint masonry of these last walls stands at about the level of the top of what is left of the other walls which preceded them.

Such is the description of a building of considerable interest and magnitude : rising above the earth in the early days of the building of Calleva, in the time of the first Claudius, stretching eastward in the reigns of Antoninus Pius and Commodus, we find its third alteration contemporary with Gallienus, Victorinus, and Claudius Gothicus, whilst its fourth period—the one nearest the surface—yielded coins of Diocletian, Maximianus, Carausius, Constantine, Theodosius, and Honorius ; and now, fourteen hundred years after its burial, it silently records its consecutive occupation by the Roman from the earliest days of the Christian era to the last days of their waning power in 410. Taking into consideration the position it occupied in relation to the Forum and the Basilica, its great size, the growing importance attached to it throughout three consecutive centuries, and the attention given to its alteration and additions, we may assume it was not unlikely to have been an official residence, and probably was the actual home of one of the *Duumviri* of Silchester.

This is the only building in which any hoard of coins was discovered. In the room to the west of the *triclinium* a number of bronze coins were found on the floor at about 2 ft. 6 in. distant from the wall ; they appear to have been thrust into a hole in the wall of the house, probably in a leathern pouch ; in the falling of the wall they came down with the débris of clay and flint, and were found under roof-tiles and plaster lying in a little heap on the white tesserae, which was stained beneath them a deep bronze colour. The peculiarities of these *folles* were that the greater part of them were the coins of former Emperors, re struck by Carausius. This taken in connection with the finding of a somewhat rare coin struck at Treves, in commemoration of peace between the three Emperors, Diocletian, Maximianus, and Carausius, and some types of coins of his reign not often found, has led to a supposition that this Emperor at one time made his head-quarters at Silchester. These coins, doing duty to the memory of past dominion and the tardily acknowledged power of the successful usurper, are of various dates ; in some the head of Carausius is hardly more apparent than that of Postumus, Gallienus, Maximianus ; in others the legend belongs to Carausius, whilst the head of Postumus still asserts its primary origin ; in many, irrespective of the reverse having at an earlier date carried a legend of different sentiments,

"PAX" is stamped upon the coin. Out of the 42 coins found in this group, 31 bear the impress of Carausius.

Amongst others, one found on the north side of this house appears to have been struck by Carausius, and purposely circulated by him, bearing the head of Maximianus, to publish to his subjects the establishment of peace between the three Emperors. This coin is in the most perfect condition possible, and can hardly have been in circulation at all; it bears in the exergue MLXX.^a Carausius and his successor Allectus appear to have used the London Mint which was probably established about that date, with little or no intermission. A coin of Carausius helmeted has been found in the adjacent house; it is an excellent specimen, and there is also a very beautiful coin with its reverse exactly similar to the "Adventus" of Aurelian, which has beneath the legend "Adventus" a soldier on horseback, and below the horse's foreleg a small bird, whilst a coin, not apparently described in any published list, has on its reverse a Capricorn to left with a trifid tail. A great number of the ordinary types of the coins of Carausius have been found and chronicled in the *Journal of the Excavations*.

The articles collected in the course of the uncovering of this house are, as one would expect, those in domestic use. The tiles were throughout of remarkable size and thickness. Two of the number possess an interest of their own. The caliga or boot of the Roman soldier has left its print in one of these tiles. The outer edge of the sole was closely studded with large-headed nails, driven in as near each other as the space allowed; the nail-heads were three-eighths by a quarter of an inch in size, and a line of no less than nine nails occurs in the length of three inches: the centre part of the sole appears as if it had been filled up with nails at random.

The other of these tiles is still more interesting as it bears a record of daily life upon it. It has part of an inscription on its surface, not however a name stamped into it, but a word written with great freedom and clearness with some sharp-pointed tool whilst the clay was moist. Some Roman lover was thinking of the maid he worshipped whilst preparing his tiles for the kiln, and with a lover's ardour he scribbled on one of them some sentence about the maiden, more indelible than the passion it expressed, of which the last word, "puellam," alone is left to record to a distant age the Roman's love.

^a Bust radiate to right with cuirass, IMP. C. MAXIMIANVS. P. P. AVG. Reverse, Peace standing to left with olive branch in l. h. and sceptre transverse PAX AVGGG.



INSCRIBED ROMAN TILE, SILCHESTER.

The iron implements discovered in this building consisted of a buckle, some straps and bands of various lengths and sizes, clamps with stud-heads for fastening thick planks for doors, spring bolts of several sizes, with the keys to compress them, and door-hinges. But perhaps the most interesting was a knife, 6 inches long by $1\frac{1}{4}$ inch wide, of curious construction, with ring attached, which has been considered to be the knife of the *haruspex*. A coin of Tetricus, with several of the sacrificial implements on it, depicts this knife. This *cutter* has probably played its part in influencing the fortunes of the camp, as much as any more formidable weapon. A very large quantity of iron nails of all sizes, some unusually large, were turned up in excavating here; they are indicative of the amount of timber which entered into the construction of the building.

The bronze articles, few in number, were in extremely good preservation, free from corrosion, sharp and well formed as before their long burial. In the deposit which choked the ducts of the largest hypocaust a beautiful bronze ring was found, which combined the double purpose of ornament and use, both fitting the finger and being finished as a key; it must have been the work of an accomplished locksmith; dropped in the *triclinium* it probably was the master-key of the wine cellar in which the noble Roman who inhabited these fine quarters kept his choice Falernian. A perfect bronze stylus, with a point sharp enough for the keenest Latin epigram, was dug out in opening the ambulatory, whilst a bronze needle the size of a small packing-needle, and some pins, with the heads cleanly cut into ornamental facets, belonged to the feminine part of the community; some fibulæ, with springs formed by coils of wire tightly twisted, and with a shield to protect the point, complete the list of bronze implements.

Only fragments of pottery were discovered here; the remains of an elegant bowl, of pseudo-Samian, is marked with an unusual stamp of a nine-petalled rose, and the letters OF CASSEA. The handle of an amphora, reading—

L . IVNI . M

ELISSI . P

adds another example to those mentioned in Mr. Wright's List.^a Common earthenware in a very fragmentary state testified to the habitual breakage of domestic use.

[The excavation of the Forum and Basilica commenced on July 18, 1866, but a full description of it is given in the paper read on June 19, 1873.]

^a See Wright's *Celt, Roman, and Saxon*, p. 475.

XVI.—*Third Account of Excavations at Silchester.* By the Rev. JAMES GERALD JOYCE, B.A., F.S.A., Rector of Stratfieldsaye.

Read June 19, 1873.

On two previous occasions, in the years 1865 and 1867, I have given some accounts of the excavations in the Roman city at Silchester. The work was then in its infancy; an interval of six years elapsed since my second Paper was read; and the period thus embraced will be found fruitful in discoveries of interest and importance.

Your attention is invited, first, to the details of two of the principal gates; that upon the east, which received the Roman road from London, and that upon the south, by which the two converging roads from Winchester and Old Sarum entered at one opening.

The Forum remains in a singularly complete state as regards the foundations and footings of all its walls. These are, in fact, so perfect as to make it easy to determine the dimensions of every part of the ground-plan with perfect accuracy.

By the side of the Forum, and united closely to it, so as to be included within the same outline of plan, are the vestiges of a noble basilica—a ruin, or rather, indeed, the relic of a ruin now, but so impressive in its greatness and decay that no reflective man, calling to mind the scenes it witnessed for centuries, can behold it to-day unmoved.

Beyond the Forum, and lying about midway between it and the south gate, is a temple of considerable magnitude and circular in shape. This itself is also an object of no ordinary archaeological interest, and one most fruitful in questions for future solution.

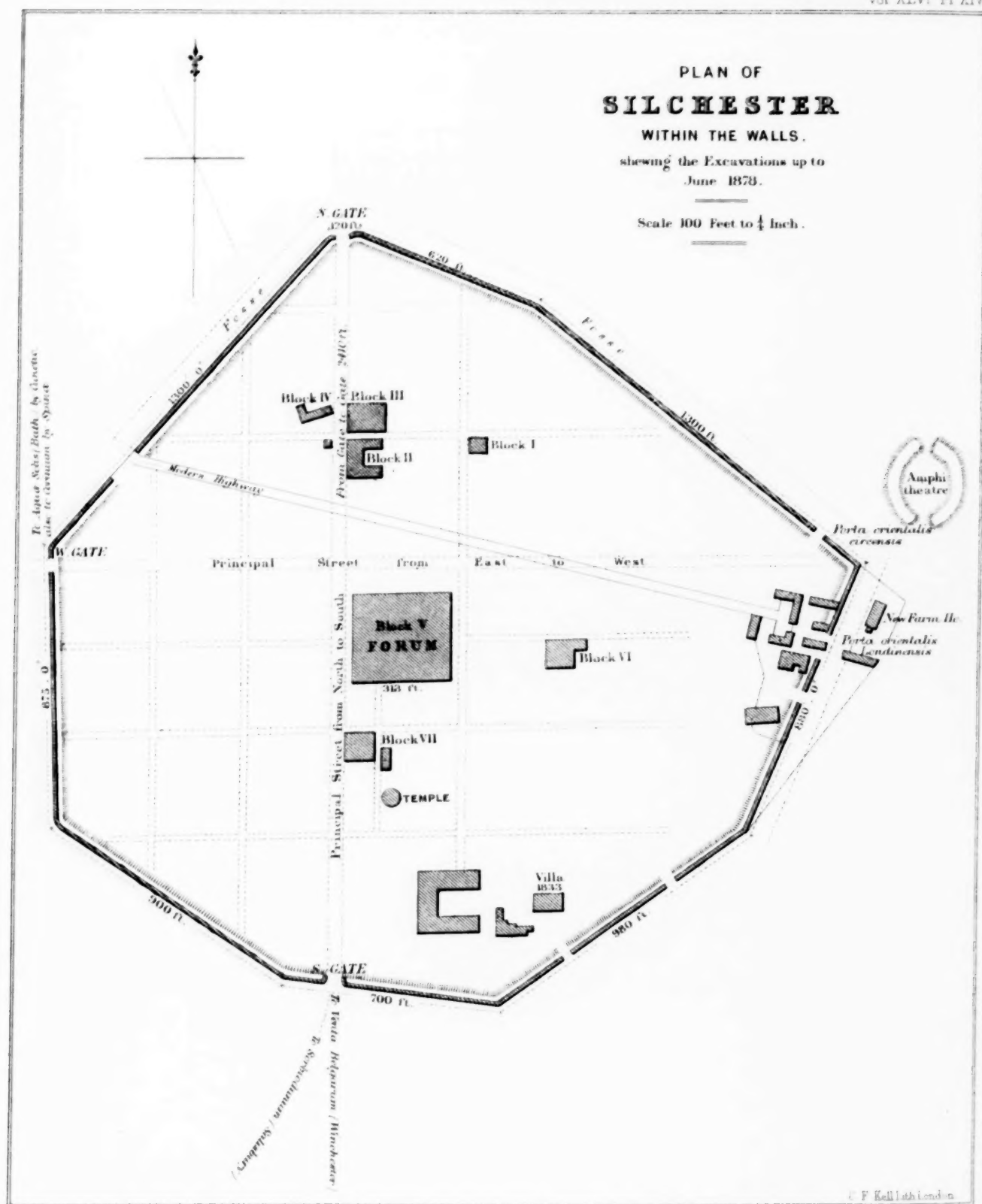
I propose, therefore, to lay before you the particulars connected with each of these constructions in their order.

The two gateways have been first mentioned, because there appeared to be a certain propriety in considering them first; but, as a matter of fact, they are among the most recent of the discoveries. It is important, in describing the

PLAN OF SILCHESTER

WITHIN THE WALLS.
showing the Excavations up to
June 1878.

Scale 100 Feet to $\frac{1}{4}$ Inch.



position they occupy, to put on record that the exact perimeter of the walls, as measured upon the plans made by the Ordnance Survey, is as nearly as possible 2,670 yards. This measurement was taken along the centre of the wall, upon the original plans themselves, by Captain Ferrier, R.E. This differs somewhat from the plan published in *Archaeologia*, vol. XL. Plate XXIII., before the Survey was made, and it is desirable to give a fresh plan based on that Survey (Plate XIV.)

In proceeding now to the details of the great east gate it is necessary to revert briefly to the Paper first read here on this subject, because the facts brought to light by the progress of the excavation rectify some statements advanced at that early stage of the work. In 1865 these excavations were in their infancy, but they had already established two facts definitely: first, that the streets were really at right angles to each other, and circumscribed rectangular *insulae*; and secondly, as a result of this, that the great road, or *via*, entering the city from the west side and passing straight across it, would run close by the northern face of the Forum, but, having done so, would find no exit on the east (if it followed an unbroken line), at the point where it had been assumed that an east gate had existed. This difficulty had been known to the surveyors of the last century, some of whom went so far as to lay down all the streets askew. It was met in Mr. Maclaughlan's excellent Paper of 1850 by making this principal western *via* "run in the direction of the south-east angle," while a second *via*, parallel to it but more to the south, entered from eastward into the Forum, at the centre of which it must have turned to the right, and fallen into the other. This appeared complicated and unsatisfactory, and an apparently better solution offered itself when the first of this series of Papers was read, at which time a gate was discovered in the east wall, almost in a direct line of this *via*. The projection of the direct line, without any bend or deflection, carries the road to within 25 yards of that gateway. In consequence of this circumstance, and of the fact that such an arrangement for the exit of this *via* through the walls tallied perfectly with the ascertained rectangular plan of the city, it was advanced in that Paper that the then recently discovered east gate, though not of imposing magnitude, was probably the one through which the road had actually passed.

The facts on which such a statement rested remain unaltered, but, at the same time, the still more recent discovery of another east gateway, of much more imposing size, about 120 yards south of the other, must rectify the opinion which was then advanced, although it brings us in reality no nearer to solving the question as to the line taken by the great London road after passing through the walls.

There can be no doubt whatever that there was, by means of this smaller east gate, an almost direct exit from the principal *via*, which passed along the northern face of the Forum. Close to this exit is the amphitheatre, on the other side of the foss; and the inhabitants of the little farm at the amphitheatre state that after hot summers a road may be traced under the herbage passing onward to a beautiful spring of perennial water, where was probably a *nymphæum*, large pieces of wrought stone having been found there. For clearness sake, therefore, as there are two gates so near together, I would propose to distinguish them as being respectively the "*porta orientalis minor*" or "*circensis*," and the "*porta orientalis major*" or "*Londinensis*."

I proceed now to assign the exact position of the great east gate and to supply some particulars of the manner of its discovery, with the detail of its dimensions.

The Ordnance department was in the act of completing the survey of Silchester in 1872 when, having in view the definite settlement of this site, I requested the surveyor employed to lay off from the plans of the adjoining country the exact direction of the Roman road from London, as it approached the walls from the outside. Some interval of this road was wanting, but he was enabled to mark the line upon the ground itself at the east wall with perfect accuracy. It was found that it struck a point within the farmyard where the wall is broken away, and exposes a considerable gap by which the modern highway now enters. A trench was immediately cut by my order at this point in the direction of the wall each way. The result was that in a few hours, without either delay or difficulty, the great east gate was laid open.

The centre of the roadway from London, entering the walls of Silchester, passed through at a distance of 260 feet south of the corner next the amphitheatre.

The gateway here, as approached from outside, presented a curtain 45 feet wide, in which were the openings of the portals. This curtain stands backward 9 feet from the line of the main wall itself, it being recessed between rounded checks on both sides, and the main wall sweeping inward to meet it each way with a rapid curve. In the cases of other Roman gateways of any size in England, of which the construction has been ascertained, they stand invariably between projecting towers. These towers are frequently solid, and very generally are circular or semi-circular, as at Pevensey and Lymne. At Silchester we have, therefore, this peculiarity (which appears to characterise its other gates also), that the curtain is recessed back from the line of the main wall,

and that the inward sweep of the wall itself, in a rounded form, does duty for the flanking towers on each side. It is obvious that this rounded portion of wall may have been surmounted by an actual turret.

We are fortunate in having obtained very complete dimensions of the details of the plan of this gateway, with one exception, namely, the width of its portals. The curtain has been stated to present a face of 45 feet, and the opening through it for the roadway to enter, as actually excavated, is 28 feet 6 inches. The walls were so perfect as to admit of the most accurate examination and measurement, with regard to this particular. It does not appear likely however that a space so wide as 28 feet 6 inches could have been left open to receive the road; in fact, it is, on the contrary, little short of certain that two openings, the one for vehicles and the other for foot passengers, occupied the space. There was not discovered however any foundation or core of mason-work anywhere in the middle which might indicate that fact, nor did there remain the central block of stone against which the double-leaved gates must have shut. There were traces which showed that a modern drain had been driven through just there, so that in all probability in cutting it all traces of these details were removed. We remain therefore at a loss as to the actual width of the openings of the portals themselves. In all other respects the dimensions of the plan are complete.

Passing inside, through the portals, the entrance within was by an arched way resting on very massive piers. This passage must have been 28 feet in length, the piers being respectively 28 feet 3 inches by 13 feet 2 inches, and 27 feet 7 inches by 13 feet 2 inches. Constructed within these piers, in the thickness of the masonry, were a pair of guard-rooms on each side, those in the northern pier being somewhat the largest (Plate XV. fig. 1). These guard-rooms measure severally, the pair on the north 8 feet 4 inches and 8 feet 10 inches in length, by 6 feet 3 inches in breadth; and those on the south, 7 feet 3 inches and 5 feet 8 inches in length, by 5 feet 3 inches in breadth.

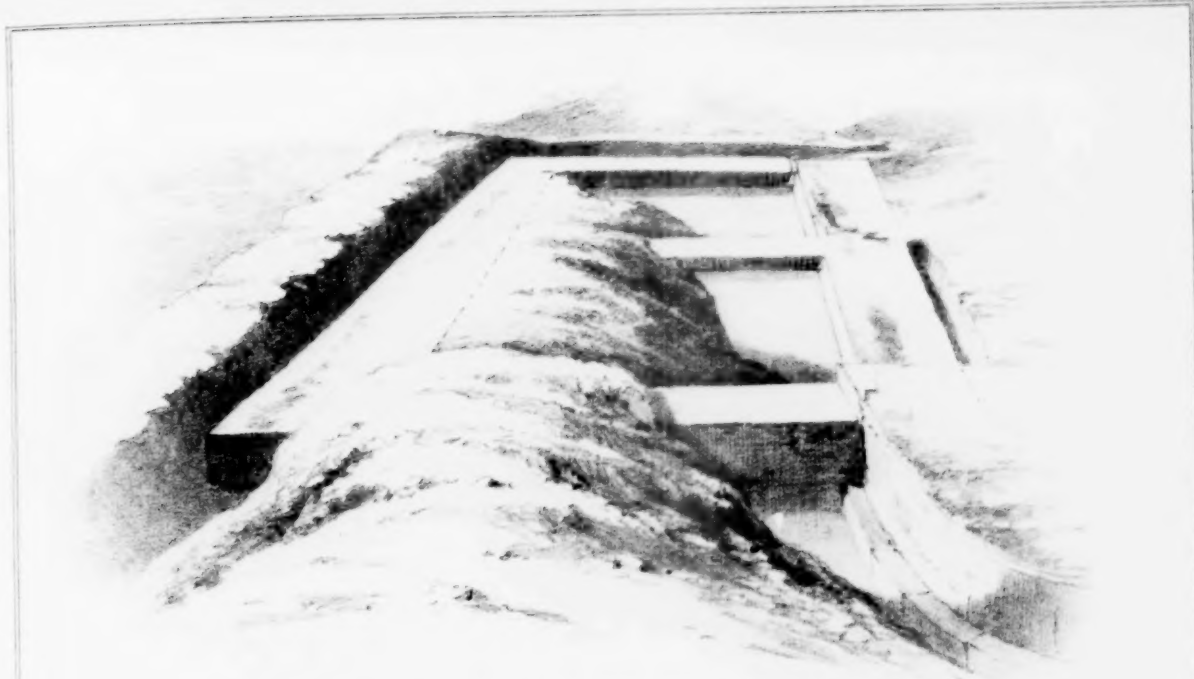
There is a footing of large stones, which stands out about 5 inches from the face of the masonry, round the inward curve of the main wall. No trace whatever of a paved floor of flat stones covering the Roman road was found, nor could any socket stones be discovered for the pivots of the gate-posts to play in.

Having thus indubitably found the great east gate of Silchester, its ascertained position rather adds to than removes the existing difficulty as to entering the city from London. The gate is planned at an angle to the wall in which it is constructed, and consequently it does not face straight in the direction of

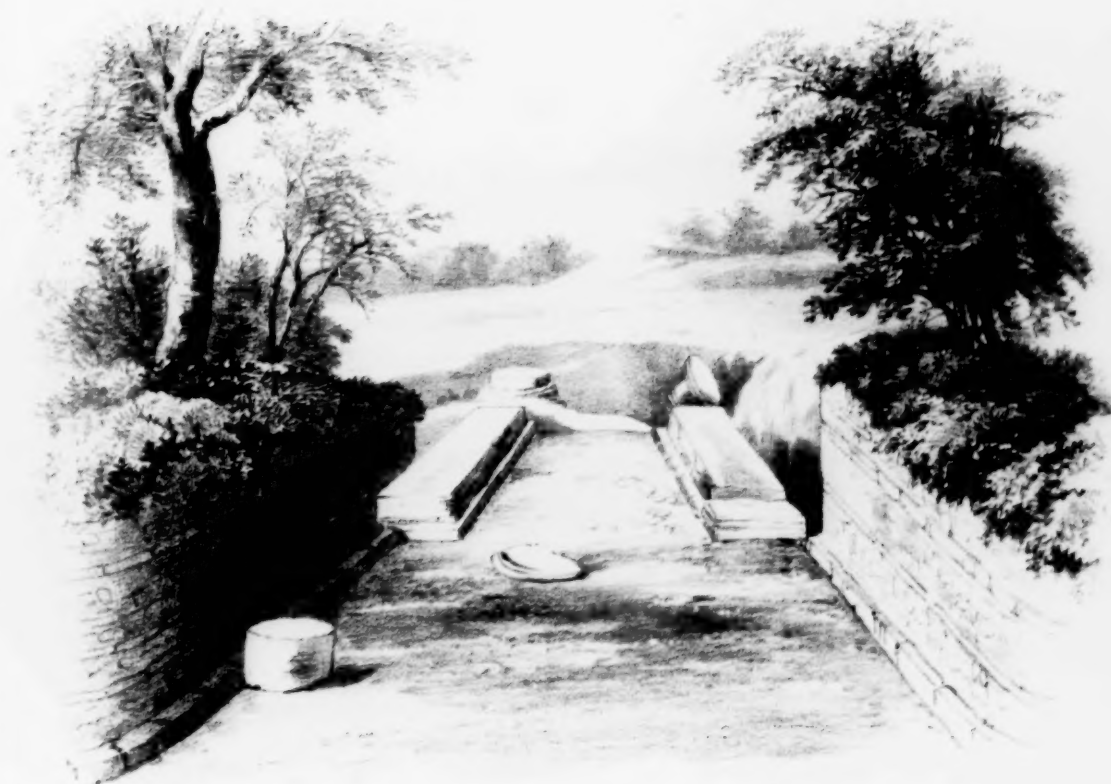
any of the streets; but aslant, looking north-west, whilst they are all true to the cardinal points.

To pass through this gate to the principal *via*, already spoken of, would require one or other of two arrangements. Either there was behind the wall an unoccupied strip of *ager effatus* or *pomærium*, which left the ground open and communication here between the two gateways free, and in which these *vie* terminated, or else there was a short connecting line of street running from this great gate, in a north-westerly direction, to meet the end of the *via*. The notion of there having been a strip of *ager effatus*, or unoccupied land, behind the wall, receives some countenance from the fact that it would have been useful for military purposes; and also that the whole ground contiguous to the termination of this *via*, and between it and the wall, has been searched for buildings with some care, by a series of cuttings made to a depth of from 3 to 4 feet, and nothing has been found. The custom of setting apart a *pomærium* was one of great antiquity, and was beyond question extended to the Roman colonies: certain public auguries, known as the *auspicia urbana*, could not be lawfully taken anywhere else in a Roman city except on such *ager effatus*, that is to say, "declared land," on which it was intended no buildings should be raised.

The next object which calls for attention is the south gate. (Plate XV. fig. 2.) Two ancient roads converged to enter here. The one of these came from Winchester, the other from Old Sarum. The gateway is constructed upon the same method as the east gate, yet it distinctly differs from it in some particulars. Its condition is such as to admit of perfect accuracy in the measurement of its parts. The lofty banks above its masonry are covered with herbage and have trees growing upon them. We were not at liberty to disturb the latter, and therefore some particulars may remain yet to be discovered. In plan it looks when examined like a gate within a gate, and in fact doubled gates were not at all unknown. The first access to it, from Venta Belgarum or Sorbiolunum, is formed by the main wall turning inward with a rapid sweep on each side, as in the case of the east gate, but there is here no curtain wall. The sudden bend inward of the main wall on the east side leaves a passage 22 feet 6 inches wide at the mouth, but narrowing to 19 feet at its inner part. This passage is about 28 feet long. Arrived at the end of this, the entry is narrowed still further by two piers, each 3 feet 8 inches wide, which reduce the actual passage to an opening of 12 feet. These piers are 17 feet 6 inches in depth, so that in fact by this approach it was necessary to pass through a narrow way of 45 feet in length. At present the



1 Guard Chambers, East Gate



2, South Gate

J.G. Joyce, F.S.A.

C.P. Keil Lith. London, E.C.

SILCHESTER.

guard-rooms have not been exposed. They were certainly not entered from the covered passage as in the other case, but they may be constructed within the piers, and have had entrances from the interior, as was the case with those at Colchester.

The subject next in order is the Roman Forum, with its adjunct the Basilica.

The extraordinary rarity of a Roman Forum remaining to our own day entirely perfect in plan, so that every chamber and wall admits of the most exact measurement, renders the construction to which I now call attention an object of the keenest interest to archæologists. It is scarcely necessary to point out that where Romans permanently settled, and where Roman culture struck the roots of its municipal or colonial institutions, the civilisation with which these were clothed experienced in no other case the singular fate which overtook it at Pompeii. At Pompeii alone it was smitten in an instant into the stillness of death, preserving intact every feature of life. Elsewhere it was very different; usually civilisation perished of slow decay as other and newer civilisations grew out of its ruin. These new civilisations, barbarous in their infancy, have everywhere to a very large extent used what they found of their great predecessor, but nowhere sought to preserve it. They plundered, demolished, or effaced whatever came first to hand. Naturally there is therefore but little left us of the public edifices of these wondrous builders, and possibly even less of their Forums. In every Roman town which was of any consequence, its Forum was the nucleus of its life. It was there, in the absence of newspapers, that the curious or the anxious among the community met every day to learn and to discuss all events both political and private. It was there, as in an Eastern bazaar, the shopkeeper spread his wares to retail them to his customers. It was there, as in a modern exchange, the merchant, who bought and sold wholesale commodities only, met his brother merchants. It was there bankruptcies were declared. It was there the public revenues were paid to the exchequer; and there public justice was administered by the principal magistrates of the town.

The direct and inevitable consequence of utilitarian civilisation has been that these chief centres of Roman city life have for the most part perished utterly. There are temples of the gods standing at this hour, but there is no Forum. Even in Rome itself their vestiges are few and fragmentary, for, though important portions remain, a Forum complete in plan does not exist in the Imperial city. The great towns of Italy at present yield none, though probably they may exist. Gaul has as yet no disinterred Forum to show. Pompeii alone bears a perfect example on her scorched bosom, and one which recalls with a startling reality the description of Vitruvius, to which I am about now to refer.

That ancient architect, in the beginning of his fifth book, describes Forums as being capable of a broad distinction into two classes, those of the Latin type and those of the Greek type. The Forum of Latin type was long and narrow, its shape had been determined by its original uses, a principal one among which was the exhibition of gladiatorial shows, for which he considers the oblong form best adapted. On the other hand the Greek type was square, and it was surrounded by a double and very wide colonnade or ambulatory. Having his text as our guide, we are met by the very singular paradox that at Pompeii, where a Forum of the Greek type would almost of necessity be the one adopted, we find a distinctly Latin one, and contrariwise at Silchester, where we should assuredly have looked for a purely Latin Forum, we have a most marked and distinct example of the Greek type. At Pompeii the length of the area is not less than three-and-a-half times its width, and a single colonnade runs the whole length of its sides. At Silchester the plan, though not absolutely square, is very nearly so, and this square-shaped area is surrounded upon its three exterior sides by the double ambulatory.

This fact is not merely curious and interesting in connection with the description of Vitruvius, but it assumes in some measure the character of a historical clue towards determining the date, if the plan of this Forum is compared with the existing traces of a much more distinguished edifice of a similar kind at Rome. It has been stated already that its three exterior sides are surrounded by a double ambulatory; the fourth side of this Forum, it should now be mentioned, is wedded to the basilica in the closest union, one great party-wall common to both (5 feet in thickness and 276 feet in length) forming at once the bond and the division between them. This combination of a Forum, square in area, and thus encompassed by double ambulatories, with a great basilica applied to it, so that the two have actually one common side, is too grand and characteristic a feature to be overlooked. It is therefore singularly gratifying to be rewarded for the labour of searching for a prototype by the discovery that, if we omit the shops (which were a necessity at Silchester), we have in effect the very plan itself upon which was constructed the world-famed Forum of Trajan with the Basilica Ulpia by its side.^a

To reconstruct from the actual remains the general aspect of the exterior is

^a The Forum of the Roman station at *Cilurnum* in Northumberland (see *Archæologia*, vol. XLVI. p. 1) was not discovered till two years after this communication was read.

A comparison with the photograph of Canina's drawing of the Forum of Trajan shows the curious similarity of the two constructions.

not difficult. The outline of the plan is unbroken by a single projecting detail. It represents a great rectangle, the longer side of which, lying due east and west, measures 313 feet, and the shorter side, extending due north and south, measures 276 feet. To raise again the structure which stood on this area, we must bear in mind that the long lines of ambulatory, both outer and inner, were not only useful for shelter to those who frequented the Forum, but were necessary to supply light, and must have been open at the sides under the roof, where the walls rose above the adjacent courts. One line of roof probably covered each ambulatory, and, although the eaves, where they overhung the exterior for the greater protection, were not lofty, yet, as the span of such a roof was not less than 64 feet, its ridge must have been of a considerable height.

Three entrances gave access to the Forum from outside; those on the north and south faces were on the Forum side of the party-wall which was common to it and to the basilica, being passages of 16 to 17 feet wide, and they were so placed that they gave admission not only to the shops and ambulatories of the Forum but also to the courts of the basilica, and most likely to the galleries in that building above its colonnaded aisles, as the stairs by which to ascend these were probably close to the apses of the tribunals. The third entrance was at the centre of the eastern face of the Forum, and, as large masses of hewn stone were found close by, we may assume that this was the stateliest of the three, and that by it was the access to the quadrangular market-place itself, which was the core of the whole. In passing, it must be mentioned that at this entrance, and in almost every other instance which could have existed here, all moulded stones have been removed, doubtless to be used again, because they were carved, and in barbarous ages saved the labour and skill necessary to produce them. In speaking therefore of hewn stone in connection with this subject, we mean merely blocks cut or chopped with an axe into some symmetrical shape. Along the exterior line of these ambulatories, upon the north and south faces, the eye would range in each case from the angle of the Forum to the end wall of the basilica over a length of 193 feet, whilst upon the eastern face, which was longer, 276 feet of building was visible, crowned at its centre by a gateway of stone, and spacious enough to admit through it into the great quadrangle such vehicles as circumstances required.

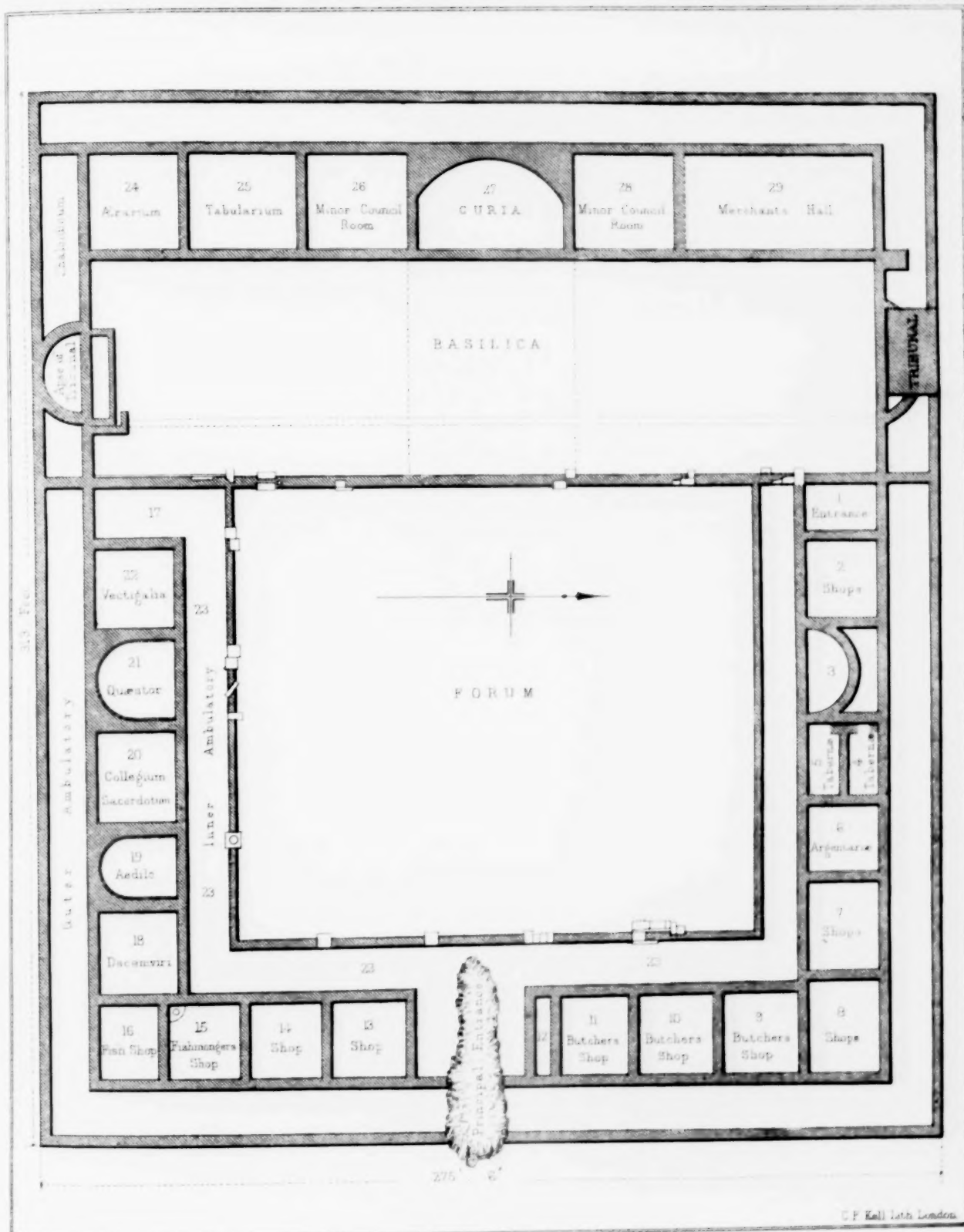
So much for the exterior aspect of the Forum; that of the basilica was far more imposing.

Of this vast structure not only the end walls but its sides must have risen

high above the roofs of the Forum. The prominent portion to the eye of the beholder, approaching from north or south, would have been the end walls rising to an apex in the gables on which the roof rested. An estimate of the extreme height of the gable can be formed only on uncertain grounds, but it was not less than 50 feet. It is a question for architects to determine, from the foundations still left, whether the apses of the original basilica did not appear to terminate the building, the ambulatory being continued beneath them at a lower level. It does not appear as if the walls of the basilica are carried out in the plan to the exterior wall of the ambulatory, nor does it seem likely that the portion of that exterior wall which lies outside the apses of the tribunals was meant to carry as lofty a gable, or so weighty a superstructure as the roof. If this be the case, the two apses were originally built up so as to be open to view at each end. The extreme width of the end wall was 70 feet, and of this width the apse occupied 35 feet in the centre. There is of course nothing whatever (except the suggestive examples of similar buildings) to give us any clue to the height to which such apses would have been carried up.

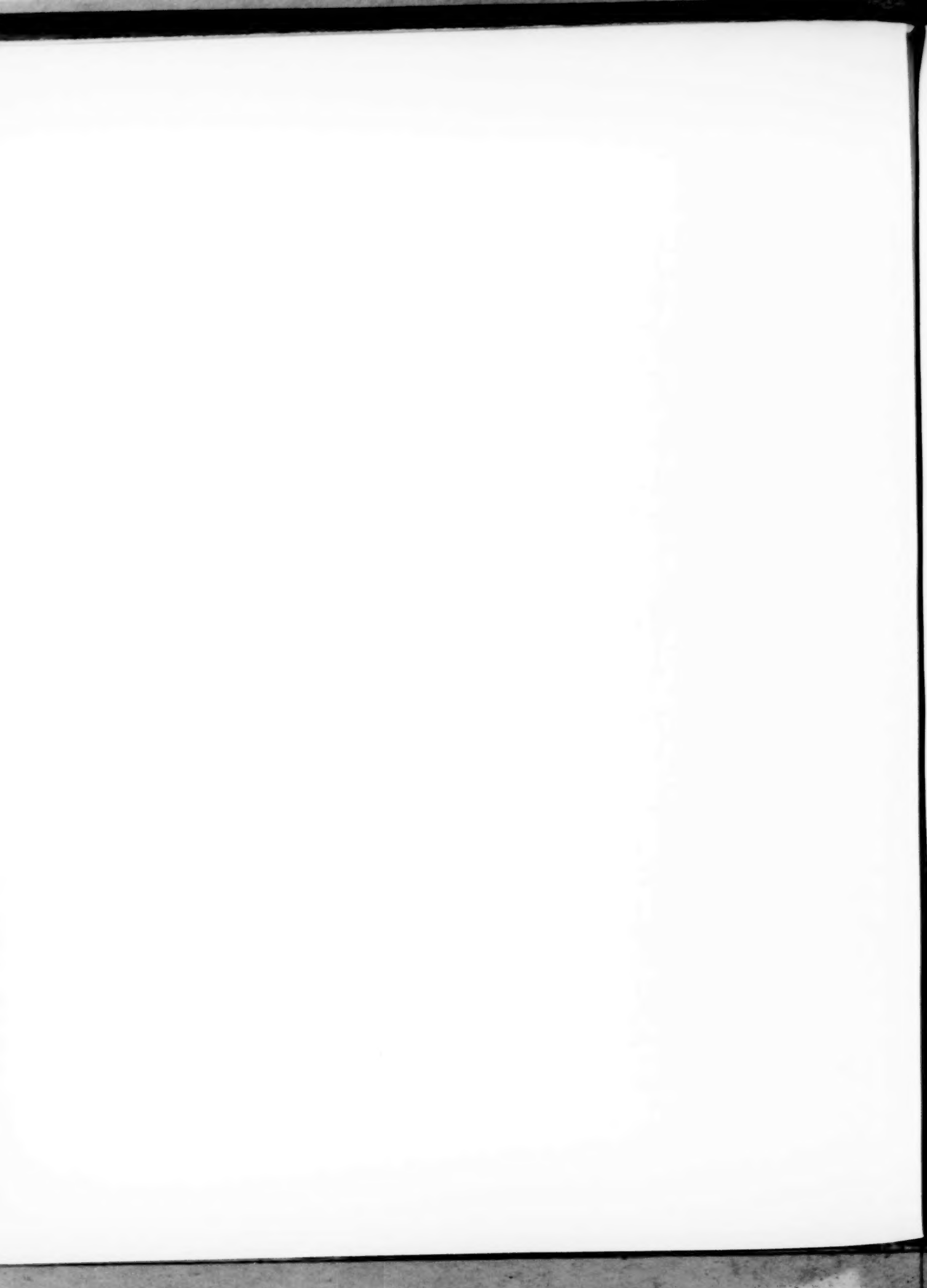
Beyond the towering basilica the lofty roofs of a range of halls, situated along its western face, for the conduct of public business, and especially that of the *curia* placed at the centre, must have formed a conspicuous object. An ambulatory wider by 2 feet than those of the Forum, and 276 feet in length, ended the prospect on this side.

It is necessary now to recall your attention to the interior of the Forum itself. (See plan in Plate XVI.) The quadrangular market-place in the centre is not an exact square, being 13 feet longer one way than the other. It measures 131 feet by 144 feet. The mould has not been removed from this, but remains here at the original field level. It might well have been expected that such a spot would yield altars, inscriptions, and possibly even statues, or at the very least the bases on which they stood. It has been carefully tested, but without any result or even the faintest promise of any. Trenches were sunk from wall to wall, running east and west, and these were in every case dug quite down to the natural gravel beneath. These trenches were then intersected by others from north to south, dividing the whole into little squares. The work proved more barren of result than any other that has been attempted at Silchester; so barren as to give no excuse for proceeding with it. Nevertheless, were it not for the extreme labour of moving so great a mass as the whole of this superincumbent mould, and the amount of time it would occupy the excavators, it



FORUM AND BASILICA, SILCHESTER.

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appears to me so reasonable to expect a result of some value in such a spot, that I should be glad to see this mass of mould transferred to the mounds of earth which border the Forum, and the bottom of the quadrangle exposed at the level of the rest of the excavation.

Round this quadrangle, as already stated, there runs a double line of ambulatories, inclosed between which are the shops upon two sides, and on the third the offices of certain public departments. The shops are not all precisely the same in size, but they vary very slightly; those along the north side are mostly 22 feet 6 inches by 24 feet; those along the eastern side 21 feet 6 inches by 23 feet 6 inches. Strange to say we are enabled to surmise, with some reasonable approach to certainty, the business carried on in several of them. It would be beyond any doubt, for instance, that somewhere in these were the *tabernæ argentariæ*, the offices of the money-changers, which had a place in every Roman Forum. I have no doubt you will recollect that as far back as the first Samnite War, or 343 B.C., Livy mentions in his seventh book the stalls or shops of the *argentarii* in the Forum at Rome. (Livy, vii. 21.) These persons were very important in a community of Romans settled at a great distance from the centre of the Empire, and their presence in the Forum was almost, if not quite, a necessity of Roman life. They were prepared to change coin of any sort or of any nation; to negotiate bills of exchange for merchants, to receive deposits either at interest or not as the case might be, and to lend money on security, very generally on most usurious terms. Their accounts were kept with extraordinary accuracy, and were accepted in Roman courts as legal evidence. They also, though not themselves auctioneers, kept a register of the proceeds of sales by auction, which took place always in the Forum. You will observe, at the centre of the north range of shops, one which is the only example of a chamber divided in the middle by a wall across it. Upon each side of this wall (which thus forms a dividing line) you will also observe recesses or niches in the thickness of the wall, which might serve as receptacles for strong boxes, whilst the central partition wall is so placed that there is a shop facing each ambulatory with such a niche in each shop. The following is an extract from the Journal of the Excavations with regard to the little *taberna* looking on the south ambulatory: "Feb. 27th, 1868. The most interesting discovery in this room, which is but 21 feet 3 inches by 12 feet, is the singular quantity of coins dug out in excavating it. These coins are for the most part of the early reigns of the fourth century, and are, with one exception, all of bronze: several of them were in the most beautiful condition, and cannot have been long in circulation. But, although they are

principally of the foregoing date, there are a few which run considerably further back, and they do not appear to have been left in one hoard, or put away within a purse, bag, or box, but they have occurred in digging as if loosely scattered from time to time about this small area. Many were corroded and worthless, but their number altogether, including those of every sort and condition, was not less than sixty-one pieces."

The exact list of the pieces which were legible follows this entry. In the corresponding little room facing the north ambulatory there were found a number of coins, but not so many as in its companion chamber. Forasmuch then as one of these two, which are the smallest, and perhaps I may add the best protected by their position of all the shops in the Forum, there was found the largest number of pieces of money, and those pieces in some cases so fresh as to have scarcely been in circulation, we may very reasonably place here the *tabernæ argentariæ*, or offices of the bankers and changers of money.

No gold ornaments have been found during the recent excavations, and very few of silver; a good many fibulæ of bronze, and some which still retain coloured enamel worked in what we call at present *cloisonné* patterns, have from time to time been dug up. On the whole but few rings have been met with, considering how very common their use was. One interesting example has occurred of a bronze ring with the key of a rather intricate lock attached. Many fragments of armlets have also come up upon the spade, but almost invariably slender in construction, and of little worth beyond their interest as curiosities; bronze armlets, so very small that they must have fitted only the arms of very little children, have been found. Part of a bronze chain bracelet, with snap-catch at one end, is amongst the relics of the Forum. Bronze stud buttons, and sometimes the imitation sapphire or white cornelian studs, or pins with imitation sapphire heads, have been discovered. There is also another description of art work in bronze which is both curious and amusing, and of which several instances have come to light. This is the imitation in little of common articles or animals, worn as ornaments it may be, but in some cases beyond doubt meant for children's playthings; there are a tiny bear, a spread eagle, a gamecock, a quaint rocking-horse 4 inches long, a toy anchor, a very infantine gridiron, and *securiculæ* or small axes. There were of course shops in the Forum where such works were exposed for sale, and doubtless where also they were repaired. The dealers in such wares are very likely to have had their *tabernæ* next door to the money-changers, and this supposition, which had been previously entertained, received a singular corroboration from the fact that out of the floor

of one of these two shops there was dug up a very small bar of silver, evidently employed for repairing some little silver articles, and the end of which appeared to have been melted off in this process when last it was used.

With regard to the large shop at the north-east corner I do not find any clue; nothing was discovered to throw light upon the occupation of its ancient owner. It is the roomiest in the whole Forum, and if its capacity, and what our modern puffers would call "its excellent business situation," are to be taken at all as any guide, we might well place in it a dealer in drinks. The shops for the sale of wine both hot and cold are of very frequent occurrence at Pompeii. We cannot doubt the fact that thirsty litigants in the basilica and the criers and auctioneers of the market-places must have had refreshment on the spot.

The three shops next in order, and upon the eastern range, must be given up to the butchers. The little hooks off the ends of their steel-yards have been found here in some number; in fact every hook of the kind, with one sole exception, came from one or other of these three shops. How singularly the finding of these shops of the butchers, at the corner of the Forum, recalls the vivid picture of Livy, when he describes how Virginius, preferring to see his child die by his own hand rather than live a life of shame, snatched a butcher's knife from his stall and plunged it in Virginia's heart.

In the small and narrow apartment beyond I do not attempt to place any one especial, nor in that which is first upon the other side of the gate, but in the next there is ground for thinking that a dealer in game lived. In the floor of this were buried the skulls of four dogs, of different sizes, being a description of animal remains of which we have had no trace elsewhere, and here also were the spurs of gamecocks. A small knife-blade discovered here, if it be really (as has been supposed) an oyster knife, but which in my opinion is not certain, belonged assuredly to the shopkeeper next door.

The shop next door cannot be mistaken. It was the favourite luncheon-bar of the Forum, and the favourite food was oysters. Here deep in the floor everywhere, outside it in the ambulatory, and extending from it up to the very corner of the exterior wall on that side, is a great bed of oyster-shells underneath the level. It is the accumulation one would suppose of many generations of deceased oysters, and must be seen to be fully credited. In the inner corner of this shop a shallow pan of coarse grey earthenware, two feet wide, was built into the walls. This pan no doubt was the transitory home of the "natives" who arrived from the coast.

Other trades were exercised also among the craftsmen who used these shops. Several awls of sandal-makers have been found. They are very coarsely wrought, being made roughly of a piece of roebuck-horn, the tip of which has been scraped or pared to a point; in one instance the point has been notched for the purpose of scribing a double line on leather when pressed hard and drawn quickly along by the side of a straight-edge.

A very interesting series of rooms which are not shops next calls for our attention.

Forming the southern range of the Forum, and intended plainly to be entered only from the innermost of the two ambulatories on that side, is a series of rooms longer in size than any yet spoken of, and five in number, arranged symmetrically so as to be alternately rectangular and apsidal. The room in the centre is a rectangle; those on either side of it terminate in apses, and beyond them the end rooms of the series are again each a rectangle in plan. They are similar in dimensions, being 24 feet by 26 feet, a hemicycle being inserted in the case of two of them within that area.

Nothing could more clearly bespeak their uses than these rooms. They are meant for the offices of public departments, those with circular ends being intended for a president who sat in the centre, and his assessors whose seats surrounded him on either hand. That such an arrangement was peculiarly well adapted for the transaction of public business of committees, and was a capital one for the facility it gave of hearing evidence, there can be no doubt. The committee-rooms of the House of Commons have not indeed as yet arrived at the hemicycle in the construction of their end walls, but they have taken the first step in that direction by having adopted universally a horseshoe table, at the centre of the curve of which, the outer side, the chairman's seat is placed, while the other members of the committee take places on his right and left. The first department we can fix here is that of the *ædile*. To the wellbeing of the Forum the duties of a Roman *ædile* were all important, as indeed they were likewise to the condition of the streets and buildings of a Roman town. The standard measures for the bushel and half-bushel of grain, by which the *ædile* regulated those of the retail tradesmen of the market, remain fixed against the wall of the ambulatory at Pompeii. In his office were kept always at hand standard weights of every size, and he adjusted disputes by the most summary kind of jurisdiction, ordering short or false weights to be destroyed on the spot. In one of these public offices the *ædile* of Silchester sat, placed in the most convenient

situation that could be devised for the adjustment of quarrels over weights and measures in the market or the shops, or as official inspector of streets and buildings in the towns.

The second department to be placed here is that of the military paymaster; the Roman quæstor or pro-quæstor, or the officer charged with the duties of such a post, though of lower rank, had an onerous part to discharge. He was the military paymaster on the one hand, and in provincial districts was, on the other, collector of such portions of the public revenue as were not managed by committees of finance, who, as is well known, farmed the taxes under the name of *publicani*. It appears extremely probable that as fresh levies arrived on the coast of England from the continent, whoever they may have been, Tungrians, Spaniards, Syrians, Moors, Bactrians, they marched by Silchester in many cases on their way to the head-quarters of the cohorts. In some instances these levies would be cavalry. There must have been a department here, under a quæstor or pro-quæstor or some official, where military pay, allowances, and forage would be drawn, and where soldiers' deposits could be received. To this use we may assign another of these public offices.

A third must be given to the revenue, where sat the collector of taxes for the district. Vitruvius, in his account of the construction of basilicæ, places the office for the collection, or rather the payment, of public taxes upstairs, in one of the galleries, above the colonnade. It is quite certain that there was always an office of the kind attached to a provincial building such as we have now under consideration. We cannot be far wrong if we give up a third of these offices for this use. I have selected that nearest the entrance as being the one most accessible for all connected with either the payment or receipt of the *vectigalia*.

There is something so extremely probable in these three assignments of a purpose to three out of this series of rooms, that I abstain from suggesting uses for the two remaining, lest I might appear to detract somewhat from the aptness of them if the others did not apply equally well. No scholar, however, will be at any loss to find uses for the other two rooms. There can be no question that all these were offices, not for judicial or ceremonial purposes, nor for the discussion of questions of municipal importance, which would be reserved for the basilica, but for public business connected with the daily life of the individuals who crowded the busy market, or the noisy ambulatories of this Forum.

It remains only to say that the access from the inner ambulatories to the central quadrangle appears to have been probably through three entrances upon the north, and as many upon the south side. Large displaced blocks of hewn

stone mark still the positions where these portals were. On the east side it seems likely that a more ponderous gateway, with perhaps three arches, opened at the centre on the quadrangle. Projecting piers are left which imply this.

It is time that we transferred ourselves to the basilica, which, though but the shattered fragment of its former self, is much the most deeply interesting part of these excavations.

This grand structure appears to have had two distinct lives. The characteristic features of its earliest existence are indelibly written upon what is left; but that which lies to-day unburied is the scathed relic of its latest years, when it had been resuscitated and changed after having at least once perished by violence and fire.

The area of the interior was 60 feet wide and 268 feet long. In its first condition the plan of its area had at each end an apse, being evidently constructed expressly for the tribunals of those two chief magistrates of Roman municipalities, the *DUUMVIRI*. To obtain a clear idea of the relation of its parts it is necessary to describe more distinctly how this area was appropriated.

Upon the west side, and exactly at the centre, it opened into a large hall which had a higher floor, ascended by two steps. This large hall was also apsidal, its apsis being flatter than a semicircle, and its opening being 37 feet across. This hall is a marked feature in such buildings, and intimately connected in this example with the relation of its parts to each other.

The hall in question was the *curia*, or council-chamber. "A treasury, a prison, and a council-chamber, must be joined to the Forum," says Vitruvius. "Of these the council-chamber is the most important, and should accord with the dignity of the state." We shall return again to the consideration of this *curia*, which has been mentioned at this point in order to explain that about 45 feet in length of the area at its centre, directly fronting the steps which led up into this hall, appears to have been a sort of *area comitialis*, a place of assembly for the people, how marked off is not clear, but connected with the council-chamber, so that persons could be addressed from the steps.

In the words of the Journal, March 17, 1870, written when this was first uncovered, it is thus described, "A concrete floor about centre; it is firm enough at the middle, but much decayed at the outer edges. There are no marks upon it, as far as we can trace, of any tesserae to make a pavement. It runs up to the apsidal court or chamber, which has been named the Room of the Decurions."

North and south of this central space were the two courts, each 60 feet wide

and a little more than 90 feet long. It is rather singular that, although careful search has been made to discover traces of any separation or *septum* which served to mark off these courts from the central space, no trace of any such partition has been discovered, and, so far as examination can lead us to judge, it would seem rather that this vast hall was open along the line of its floor from end to end. The characteristic feature of a basilica was its colonnades, and these were not absent here. Vitruvius describes, in the third chapter of his third book, the method of placing a substructural wall underneath a pavement and beneath a range of columns, to which walls he gives the name of *stereobatae*, because they carried the solid mass of the pillars constructed over them without suffering any displacement or subsidence to occur. Such a wall as this, to sustain a range of columns, remains below the level of this floor, on one side of this basilica, and, though not a single base continues in position upon it, yet the presence of this wall tells its own tale. There was on each side a colonnade or porticus 15 feet wide, the columns themselves were 3 feet in diameter, and the width of the nave or centre 24 feet or thereabout. There remain in the basilica, or the Forum close by, fragments of shafts, capitals, and bases to supply us with accurate details of these. The capitals were richly carved, and the work was of a good character; they belong to that well-known type which is easily recognised as Roman Corinthian. The floors of the tribunals within the apses were raised, and, as not any vestige of a stone ascent has been found, these tribunals were most likely reached by wooden stairs. The fronts of the tribunals were faced by thin slabs of polished Purbeck marble, secured in place by small iron clamps, and in all probability bearing inscriptions. Some small pieces of this polished Purbeck marble remained fixed against the vertical face of the tribunal at the south end, the iron clamps when first exposed retaining their hold. In the mortar with which this apse is built, or lying close by the walls, or deep in the débris upon the floor, have been found the coins of Vespasian, Titus, and Domitian, whilst at higher levels have abounded the coins of nearly every subsequent reign during the entire period of the Roman dominion.

The relics left us to-day are those of such a structure as has been now described, but subsequent to exterior changes. This basilica contains wrapped within its bosom a hidden but frightful tale of violence and ruin, long anterior to that destruction which lies open to our eyes. Two short extracts from the *Journal of the Excavations*, of June 21st and October 27th, 1870, will show this to be the case. The first refers to the central space of the floor of the basilica already spoken of. "On the northern side of the present work there appeared a peculiar

rising in the level, where the concrete of the floor seemed to be laid over the crown of an arch below. It was so extremely like the shape of the crown of an arch that it deceived the workmen, who reported that they had found a vault. A very careful examination was then made, by digging through the concrete floor and sounding for stone or tile-work beneath, but, after a cut had been made and the substratum removed so as to lay bare the nature of the ground, it was quite clear that no arch-work of any sort existed. The singular formation which the floor had assumed was due to its having been laid over the rubbish of some older structure. This older structure had perished by fire, there being a considerable quantity of black charred substance, having mortar mixed with it. No trace of construction could be discovered: it was a mere débris of minute pieces, apparently shot in as rubbish, or perhaps built over without removal after destruction; and hence the inequality of its subsidence in the lapse of centuries, owing to the percolation of moisture, caused by the peculiar saddle-backed formation of the concrete. It is a noticeable circumstance that the central part of the Forum clearly underwent destruction and rebuilding prior to its ultimate ruin, and that this destruction was accompanied by extreme violence."

The second extract is from October 27th in the same year. "Referring to an examination carried through and beneath the level of a concrete floor, a similar examination has been made since, more to the north, in the same part of the basilica, and with a result precisely the same, except that the evidences of fire in this last case were more plentiful. Several seams of charred matter, like layers of burnt timber, were found at depths varying from 5 to 12 inches lower than the concrete floor, mixed with rotten mortar and other rubbish of destroyed buildings."

Three striking details of the present basilica agree with this evidence: first, all the walls upon the west side, which are of masonry quite unlike and quite inferior to the rest of the structure, indicating here, as has been the case elsewhere in the course of these excavations, a rebuilding by later and less skilful hands. And secondly, the altered tribunal at the north end, where the remains of the ancient and original apse are clearly traceable beneath a rectangular floor of poor workmanship, laid with the coarsest red *tesserae*. Those who rebuilt the basilica could not, or at any rate did not, replace the hemicycle of the tribunal. And lastly, there is the strongest reason to think that the range of columns on the western side was not rebuilt; for not only is there no trace of its existence on this side above the floor level, but even this solid substructural wall beneath the level on the opposite side is wholly absent here, implying that less skilled

workmen, rebuilding in haste a work of great extent, used this great wall, which was 5 feet thick and ready to their hands, as a quarry from whence to procure a plentiful supply of flints for their task. Any architect will at once see from the ground-plan that such a wall must have originally existed in the first building, in accordance with the strict conditions of symmetrical arrangement always observed in the works of the ancients.

Above the colonnade on each side there must have been originally a gallery, enclosed along its front by a parapet high enough to prevent those within it from being exposed to the too curious eyes of those in the basilica beneath. An architrave which rested on the large columns ran below this gallery, and upheld both the parapet and a range of smaller columns, on which again were supported the beams that carried the roof. Portions of shafts which apparently belonged to this range were found on the floor. They are not, however, all of the same diameter, some being 2 feet, and some only 1 ft. 3 in. Several of these, and indeed all the wrought stone, especially the rich capitals themselves, appear to have been injured by the action of fire. The columnar construction throughout this basilica was tied together by flat architraves, and its date was considerably earlier than the introduction of that feature which afterwards became so universal, and was so pregnant with future results—the application of arches over pillars—and of which the first example is said to be the work of Diocletian at Spalato.

A range of large chambers or halls extends along the whole of the west side; they are six in number, the curia or council-chamber (already mentioned) being in the centre. These were undoubtedly intended for important public uses.

The curia itself, 37 feet long by 29 feet deep, is well worthy of a short notice. In the judgment of Vitruvius such a room was of great importance, for its dignity was to be an index of the dignity of the city, and he gives minute directions as to its construction. Above all things it was to be of a very stately height, and according to his estimate the panels of the ceiling here should have been from 30 to 40 feet above the floor. He is particular to state that at half the altitude a projecting cornice should surround the walls in order that the voice of speakers in addressing an audience should not be lost. With these statements of his it can be no surprise that this apsidal hall, raised by two steps along its entire and open front above the floor of the basilica, appears to have been more richly ornamented than any other part of the building. There were found within it small pieces of fine white marble sawn in thin slabs, imported from the Continent, which formed a *dado* or facing to the apse. The iron clamps also by

which the corners of such slabs had been secured were likewise discovered. A portion of the floor remained in its place, but it was of the commonest red tesserae similar to those upon the altered tribunal, and they had been laid in mortar which had entirely perished, affording a singular contrast to the fragments of a more ancient floor at the south end, in which the cement is so intensely hard that the tesserae of stone will break under the hammer before you can detach them from each other. It was here the most grave debates affecting the municipality or even the Imperial interests took place. It was here that the decurions or local senate met for deliberation, and here their solemn resolutions, the *Decreta Decurionum* (so well known to students of inscriptions), were passed. Here, too, all popular elections to office would be made. It may be interesting to state that on the floor of this room a small iron axe remained. Some archæologist more courageous than myself may possibly suggest that it had been bound up in the fasces of a lictor. If it had been so this would probably be the likeliest spot in which it could have remained.

On either side of this are chambers which were intended apparently for deliberations which were not conducted in the presence of the public. They are, in fact, committee-rooms, one 27 ft. 6 in. by 30 feet, and the other 30 feet square.

Beyond the committee-room on the north side the range ends with a very large hall, 60 feet long by 30 feet wide. This is the largest room within the whole circuit of these walls, except the great basilica itself. The traces of burning from the last and final destruction were more frequent and extensive here than almost anywhere. And lying, as the seams of charred matter did, over the entire area of this floor, they throw a curious light upon the circumstances under which the building was burnt. For the floor, composed of coarse red tesserae, had already perished, and had lost its tessellation from much the greater portion of it before these seams of black charred stuff had been deposited over it. This fact obviously suggests that the Roman evacuation of Silchester had taken place some considerable time before the place was finally destroyed. This great hall has been named the Hall of the Merchants, from the circumstance that the Roman architect, already so often quoted, most particularly mentions the resort of merchants to the basilica as one of its primary uses, and to render their meetings free from all inconvenience of weather he recommends that they should have the sunniest quarter assigned them. This hall lies at the south-west corner. A fragment of an inscription having on it but a few letters was lying here; it is described and drawn in the *Journal* Sept. 26, 1868.

The rooms of this range on the other side of the committee-room on the south are two. To one the name of Tabularium or Record Office has been given, because the existence of such an office somewhere here is unquestionable, and in this room was picked up a small leaden seal once appended by a string to some public document, evidently official, and of the Christian period. This little seal, though barbarous in character, is very curious, and probably belongs to the date of the Emperor Magnentius, having upon both faces the letter M above the XP.



LEADEN SEAL, SILCHESTER. (Full size.)

To the other, which is the last room of the range, the title of *Aerarium* has been assigned, though, perhaps, on somewhat insufficient grounds. It was given to it because in the *Aerarium* the most valuable and important articles would be kept in store; and here, buried deep, below 10 inches of burnt timber, lay the Bronze Eagle of the Basilica of Silchester, which is the great prize among all our relics. From the position it was found in there can be little doubt as to how it got there. It fell, unquestionably, in or with the timbers of a flat ceiling down upon the floor below it. The course of the beams which had carried that ceiling was very distinctly marked by streaks of darker colour, parallel to each other, running from east to west, and from 2 to 3 feet apart, in the stuff and débris on the floor level. The description written at the time is this—"These have the appearance of bars of blackish material, marking, perhaps, the course of certain beams of a ceiling which had fallen down and rested here." Above these marks of beams there were two seams of burnt timber, the lowermost 4 inches deep and the uppermost 10 inches, and between the two seams was a layer of mortar, stucco, and concrete, 4 or 5 inches thick. The eagle was in this layer of mortar and stucco, immediately under the upper and thicker seam of burnt wood, and at the centre of the room.

The conviction at which I have arrived as to how it came there is as follows:—It has been stated already that the west side of the basilica was destroyed long before its final ruin. Whenever that first destruction took place it was in all human probability the result of a deadly struggle between the Romans themselves, and consequent on some revolts among the legionaries. Such revolts we are

aware did occur, and, although history is almost silent here, yet we know that the reigns of Carausius and Allectus were both marked by a great defection from the Imperial rule of the Eternal city, and that the return of the legions—or portion of the legions—then in Britain, to their allegiance, was purchased by at least one bloody battle, and by the death of Allectus the usurper. The victory which cost his life is ascribed to Asclepiodotus, the lieutenant of Constantius Chlorus. The tradition long received, preserved by monkish chroniclers, and perpetually repeated in histories, that Constantine the Great was the builder of Silchester, may point towards a truth, for Silchester may have been stormed and destroyed in the vicissitudes and struggles which immediately preceded the rule of that Emperor, and he may have rebuilt it on its own ruins. The private houses attest the fact that it was built again above ashes. If we assume this eagle to have been once the Imperial standard of a Roman legion, some *aquilifer* of the revolted troops shut up here as a last stand, despairing of its safety and of his own life, and whilst the whole western side of this basilica was beleaguered, rather than surrender his trust tore away the bird from the fulmen which its talons had grasped upon the summit of its staff, wrenched off its wings, fastened only by an attachment to its back, and hid it in the wooden ceiling of the *ærarium*, placing it above a beam, as Romans are known occasionally to have secreted treasure. He himself, no doubt, perished in the *melée*. The basilica was taken, and was fired at the centre (there is evidence that this took place), but the conflagration did not consume the end room on the south of the range, and so the eagle hidden in the timbers of the *ærarium* remained where its guardian had deposited it until the final fires, kindled by barbarian hands long after the Romans ceased to dwell here, consumed this basilica for the last time, and buried the Roman bird in that venerable grave from which he has been happily rescued.

The eagle measures 9 inches from the curve of the upper mandible to the extreme of the tail. It had wings originally affixed on the back, where a socket is made; these wings stood vertically up above its head, and were gilded (some gilding remains on one feather on the right side); the talons appear as if they had clasped the fulmen, from which they were wrenched so closely that the claws remained affixed to the bar of metal. The working of each feather is carefully finished. This trophy is preserved at Stratfieldsaye House. (Plate XVII.)

Coins have been found profusely scattered everywhere. The number is perfectly surprising. In point of chronological range they commence with the reign of Caligula, A.D. 37, and end only with the Roman evacuation of Britain in



BRONZE EAGLE FOUND IN THE FORUM, SILCHESTER.

Adapted from the original by the author of the book.



J. G. Joyce, F.S.A.

Chromolithographed by C.F. Keel & Co. Ltd. St. Albans, London, E.C.

BRONZE EAGLE FOUND IN THE FORUM, SILCHESTER.

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the reign of Arcadius, about A.D. 410 to 415. The whole of this period is covered at every point, there being scarcely, if at all, one decade of years unrepresented. The date of Constantine the Great is the most prolific, comprising between two and three hundred specimens, and illustrating the historical events of his reign from beginning to end by the designs on their reverses. The coins found during our excavations include no less than sixty-four Imperial heads of every epoch during the occupation of Britain. .

Such is a description in outline of the Forum and basilica of Silchester. It possesses one interesting feature in common with Pompeii, though the tide of existence was not arrested here by any convulsion of nature. Yet at Silchester there has never been any subsequent civilisation ; it has never been built over or lived upon. Its substrata of foundations remain exactly as it was when the hand of destruction first overtook it, and it has been left for the nineteenth century to bring its long-buried treasures and interests to light.

Antiquaries are greatly indebted to the Duke of Wellington for having carried on so unremittingly these excavations, and thus bringing to light these unique and instructive relics of the Roman occupation of Hampshire.

XVII.—*Remarks on an Admiralty Seal of Richard, Duke of Gloucester.*
Communicated by CHARLES SPENCER PERCEVAL, Esq., LL.D., Director.

Read January 25, 1872.

THE Ven. Edward Trollope, F.S.A., has lately communicated to the Society an impression in gutta-percha from the original matrix^a of an Admiralty Seal of Richard III. when Duke of Gloucester, which impression is exhibited this evening.

Another impression from this matrix, then in the possession of a gentleman of St. Columb in Cornwall, was exhibited and presented to the Society in 1781 by Dr. Milles, at that time President, and is still preserved.

It will be found engraved in the seventh volume of the *Archæologia*, plate v. page 69. with some illustrative remarks by the learned doctor, and it is with the object of correcting an error into which he has fallen that I am induced to offer the following observations.

The seal, which needs no minute description, exhibits, like others of the same class, a ship with the Duke's arms on the mainsail. The legend runs thus:—

S[igillum]: **Ric'**[ard]i: **duc'**[is]: **glouc'**[estrie]: **admiralli**: **angl**[ie]:
i'[u]: **com'**[itatibus]: **Dors'**[etie] ⁊ **[et]**: **Som'**[er]s[etie].

“The seal of Richard, Duke of Gloucester, Admiral of England, in the counties of Dorset and Somerset.”

Dr. Milles unfortunately took the character **ī**, standing as usual for *in*, as a contraction for *et*, and consequently he read “et comitis Dorset' et Somerset'”.

Hence he concluded that the seal preserved evidence of a fact as to which the records are silent, namely, that Richard, Duke of Gloucester was also Earl of Dorset and Somerset.

“It seems extraordinary,” says Dr. Milles, “that there should be so little historical authority extant for the titles given to the Duke in this inscription.”

^a The matrix has since been acquired by the British Museum.

"Sir Henry Spelman indeed mentions him in the list of Admirals inserted in the *Glossary*, with the date of October 12th, but no year annexed; and again inserts his name as Lord High Admiral in the 11th of Edward IV." Sandford, he continues, in his *Genealogical History*, "states that shortly after the coronation of Edward, Richard was created Duke of Gloucester and thereupon constituted Admiral of England."

Dr. Milles then shows that this last statement is incorrect, for Richard Nevill, Earl of Warwick, was Admiral of England at the date of the duke's creation, Nov. 1, 1461, and so continued until July 13, 1462, when William, Earl of Kent, was appointed. (Rymer, xi. 490.) He adds that the latter did not long enjoy the station, for upon August 12 in the same year the King granted by patent (2 Ed. IV. pars. 1a, m. 5, and Rot. Parl. vi. 227) to the Duke the Castle of Gloucester, the office of Constable of Corfe Castle, the manor of Kingston Lacy in the county of Dorset, and other lands, addressing him in the letters patent as "Maris Admirallum."

Dr. Milles concludes with a laboured attempt to explain his imaginary earldom of Dorset and Somerset, and would date the seal between 1471 when it seems the Duke had a grant of the office of High Admiral, and 1475, when the Marquisate of Dorset was conferred on Thomas Grey.

Now it is certain that Richard was constituted Admiral of England, Ireland, and Aquitaine, that is, Lord High Admiral, by letters patent bearing date October 11, 1462,^a and at first sight the seal might be referred to this date, and might be a special seal for his jurisdiction in Dorset and Somerset. From the absence however of the words "Hibernie et Acquitanie" in the legend, I am disposed to think that the Duke was not Lord High Admiral when the seal was made, but had at that time a local or vice-admiralty jurisdiction in the two named counties. I find that the lords of Corfe Castle down to the middle of the last century enjoyed the admiralty jurisdiction over the isle of Purbeck, and it is not impossible that a more extended franchise may have accompanied or preceded the grant of Corfe Castle and the other subjects of the letters patent of August 1462.

The late Mr. J. T. Pettigrew, F.S.A., having procured the loan of the matrix, communicated about 1862 a paper on this and other Admirals' seals to the British Archaeological Association, and it was subsequently printed in the first volume of their *Collectanea Archaeologica*, p. 171.

Through inattention to the legend he fell into the same trap with Dr. Milles as to the imaginary earldom of Dorset and Somerset, and found no better way

^a Rot. Pat. 2 Edw. IV. pars 2^a, m. 19.

out of the difficulty than by adopting with some slight variation his predecessor's attempt at an explanation.

Mr. Pettigrew however did good service by re-engraving on one plate the seal in question with four more of the same class, and he appended a list of the examples of such seals which were known to him.

This list is derived without addition from that drawn up by that excellent antiquary the late Mr. John Gough Nichols as long ago as 1825,^a and comprises the following seven seals:

1. Thomas Beaufort, Duke of Exeter, 1416, son of John of Gaunt by Catherine Swinburne. Figured in *Archæologia*, XIV. 278, pl. xlvii. fig. 5; but wrongly attributed there to Thomas Holand, Duke of Exeter. The matrix is in the British Museum. *Collect. Archæol.* pl. xv. fig. 2.

2. John Holand, Earl of Huntingdon, as Lieutenant-General to John, Duke of Bedford, c. 1415. Figured in *Gents. Mag.* lxvii. 549. *Collect. Archæol.* pl. xv. fig. 3.

3. The same, as Admiral of England and Ireland, 1435. Figured in Ducarel's *History of St. Katherine's Hospital*, and repeated in *Gents. Mag.* xcv. part i. p. 209. *Collect. Archæol.* pl. xv. fig. 4.

4. The same, as Earl of Huntingdon, Lord of Ivory, and Admiral of England, Ireland, and Aquitaine. Figured in *Archæologia*, XVIII. 434. *Collect. Archæol.* pl. xv. fig. 5. The matrix, of copper gilt, is in the British Museum.

5. Henry Holand, Duke of Exeter, son of the above. Figured in Dr. Rawlinson's *Topographer*.

6. Richard, Duke of Gloucester; the seal under consideration.

7. A vice-admiral's seal for Yorkshire. Figured in *Gents. Mag.* Dec. 1825, pl. ii. fig. 2, p. 497, but not identified satisfactorily, owing to a break in the legend, which appears to be—

S · foh' · co . . oray · admiralli angl' in · com · Ebor'

This legend illustrates that of the Duke of Gloucester's seal, lending some confirmation to the surmise that it is a vice-admiralty seal. The seal is comparatively late, as the Scottish lion is quartered on the mainsail of the ship, but it is evidently copied or altered from a much older seal, if we may judge by the fifteenth century lettering, and the course of quaterfoils which surround the legend.

To these may be added the following seals of English admirals or vice-admirals, some unedited, but of which casts exist in the Society's collection. I purposely omit the seals of admiralty jurisdictions in the hands of the corporations of certain

^a *Gents. Mag.* 1825, March, p. 210.

towns, as Boston, Malden, Yarmouth, all of which have the ship for their device, as to discuss these would occupy too much time and space.

8. Edward, Earl of Rutland and Cork, son and heir apparent of Edmund of Langley, Duke of York, Admiral of the North and West, 1391. **S' Edwardi : comitis : de : (Roteland) t : de : Cork : admirali : anglie.**

9. Richard Cletherowe, Admiral of the West of England, 1406. Inscribed, **S : ric' : cletherowe : admiralli : occidentalis : anglie.** The matrix was formerly in Horace Walpole's collection at Strawberry Hill, afterwards belonged to Dr. Bliss, and is now in the British Museum.

10. Sir William Hilton, Admiral (of the Humber towards Scotland), c. 1420. **Willm . Hilton . miles . admiralis . pro . loco . hubre . usq' : scotia.'**

11. Thomas Howard, Duke of Norfolk, High Admiral, 1514. From deed in Augmentation Office, Dd. 1. A fragment, legend wanting.

12. John Russell, first Earl of Bedford of that name, K.G. Admiral of England and Ireland, 1540. A fragment s.MA[GNUM]. ETANIE.

13. Charles, Lord Howard of Effingham, 1585, High Admiral. **SIGIL · D · CAROLI · HOWARD BARON · DE · EFFINGHAM PRÆCLARI · ORD'IS · PRESCELIDIS · MILITIS · MAGNI · ADMIRALLI · ANGLIE · ET · CET · A° 1585.** Figured in Hones' *Table Book*, i. 574.

14. James, Duke of York, High Admiral, 1660. **SIGIL · ILLVST · IACOBI · DVCIS · EBOR & ALBAN · COM · VLTON · SVMMI · ANGLIE & HIB · ARCHITHAL · GVARD · QVINQ · PORT · PRÆCLA · ORD · GAR · MIL, &c.** Engraved by T. Simon; see Vertue, *Medals, &c. of Thomas Simon*, pl. xxxviii. Simon had executed a very similar seal for the Earl of Northumberland, as Lord High Admiral.

15. Arthur Plantagenet, Lord Lisle, natural son of Edward IV. Vice-Admiral or Lieutenant to Henry Fitzroy, Duke of Richmond and Somerset, natural son of Henry VIII. from two examples, dated 1526, at Exeter and Canterbury. **S. dne (sic) arthur : Plantaginet : bicomitis lisle(?) uice : admiralli : anglie : hibernie : et : acquieta (sic).**

16. Michael Stanhope, Esq., Vice-Admiral of the county of Suffolk, temp. Hen. VIII. Inscribed **SIGILLV · MICHAELIS · STANHOPE · ARMIGERI · VICEADMIRALLI · COMITATVS · SVFFOLCIE.**

17. John Basset, of Tehidy, Vice-Admiral of the north parts of Cornwall, early in the seventeenth century. Described in *Archæological Journal*, xx. 78. The inscription reads **SIGI : IOH : BASSETT : ARM : VICEADM : PARTIV : BOREALIV : COM : CORNVBIE.**

18. Colonel John Owen, Vice-Admiral of North Wales, seventeenth century.
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Inscribed IOHN . OWEN . COLL . VICE . ADMIRALL . NORTH WALLIENSIS. Silver matrix at Porkington.

Although I do not propose to enlarge upon the foreign seals of admirals, it may be well to mention that of John, bastard of Bourbon, Admiral of France in 1466, the matrix of which was exhibited to the Society by Lord Braybrooke on Feb. 26, 1835. See *Archæologia*, XXVI. 479, where it is figured. It closely resembles in design the seals of English admirals, as does also the seal of Maximilian of Burgundy, 1543, of which a full description will be found in *The Archæological Journal*, vol. x. p. 146.

The French seals of admirals must be rare, as only two are noticed in Douet d'Arcq, *Collection de Sceaux* (tom. i. p. 298), of the dates 1514 and 1738.

XVIII.—*Notes from the Court Rolls of the Manor of Scotter.* By EDWARD
PEACOCK, Esq., F.S.A.

Read February 21, 1878.

SCOTTER is a parish in the Wapentake of Corringham, in the parts of Lindsey, and county of Lincoln. As early as A.D. 664 Scotter, and its hamlet of Scalthorpe,^a with church, mill, and other appurtenances, were a part of the vast possessions of the Abbey of Medeshamstede, afterwards called Peterborough. This we learn from a charter of Ulfhere, King of the Mercians, six transcripts of which are noticed by Kemble.^b It is somewhat difficult, however, to reconcile this with a charter of Edward the Confessor,^c from which it would seem that the abbey derived its rights, or at least its full rights, in Scotter from a certain Brand. If the clause relating to Scotter, in the earlier charter, be authentic, as I believe it to be, the probability is that Brand only restored to the abbey possessions which had been alienated.

It is not my purpose, in the present paper, to trace the history of the lands which, in the Norman time, became a manor and liberty. It is probable, could indeed be proved, were proof needed, that in earlier times the manor and its demesne lands were managed by bailiffs; in latter days they were leased for a fixed rental. The earliest of these leases that I have seen is dated 1 of Richard III.; it was granted to George Sheffield and his son Richard, cadets of the house of Sheffield of Butterwick, in the isle of Axholme. They were succeeded in the 29 of Henry VIII. by Sir William Tyrwhitt, of Kettleby.^d

^a This place is miscalled in certain maps and books Scotterthorpe, but it is a blunder of very modern date. Till about the beginning of this century it was always written Scalthorpe or Scawthorpe, and is still so pronounced by every one who has not been misled by the modern corrupt spelling.

^b Codex Dipl. v. 7.

^c *Ibid.* iv. 169.

^d Proc. Soc. Antiq. 2d S., vi. 416.

The manor-house stood immediately on the north of the churchyard. Not a fragment of the old buildings now remains above ground, but foundations have been come upon, from time to time, which indicate that they formed a quadrangle enclosing a court-yard; tradition affirms that this court was entered by a fortified gateway at the north-west angle. At Scotter, and therefore almost certainly in the manor-house there, King John spent the night of Sunday, the 25th of September, 1216.* He had travelled from Burton, near Lincoln, during the day, and on the following morning went to the Bishop of Lincoln's manor of Stow. John was at this time intent on raising a force in the eastern shires, for the purpose of resisting the French invasion; it is, therefore, probable that his visit to Scotter was by appointment, for the purpose of having an interview with the knights in the neighbourhood, who held by military tenure, and the tenants of the great royal manor of Kirton in Lindsey, which extended, with some slight exceptions, over almost all the neighbouring parishes on the eastern side of the Trent.

The manor of Scotter continued to be parcel of the estates of the abbey until the Reformation, when it was transferred to the newly-created Chapter of Peterborough. Except for the short break which occurred during the period of the Commonwealth, Scotter remained attached to Peterborough until it was sold in recent days by the Ecclesiastical Commission. Thus was severed, in our own time, a connection which had lasted for upwards of eleven hundred years.

All the Court Rolls of Scotter, now known to be in existence, have been read by me. They are the property of the present Lord of the Manor, Gravenor Roadly, Esq. My warmest thanks are due to him for giving me the most unrestricted access to these highly interesting records.

The earliest Scotter Court Roll at present known to be in existence is dated 10 October, 1519. It begins with a list of the jurors. Then follow the names of the suitors who were present, and of those who were fined for not putting in an appearance. Afterwards we have a list of fines for assaults and other slight offences which were punishable at the court of the Lord of the Manor, as for instance, John Rooper was fined ij^d for that he "*fecit affraiam super Ricardi Dulbyrne,*" Margaret Myddleton iiij^d for being a common thief, "*communis latruncula,*" and Margaret Skynner, Alice Marchaunte, Johanna Lodington, Agnes Otter, and Elena Robinson, for brewing and baking contrary to assize. Following these are orders and presentments. The tenants of the manor are

* Itin. of King John in Sir T. D. Hardy's *Descrip. of the Patent Rolls*.

ordered to repair and cleanse all their sewers and ditches, and all "le lottes" & Trente bankes" before the feast of Saint Martin [11 November], William Grey is presented because he "cutted ligna vocata qwyckwoode"—that is young thorns—"in communi pastura." The abbot of Barlings, because he had not cleansed the sewer called Maneffleate Eye, and Lady Alicia Sheffelde, because she had not cleansed her lots, "in quadam riuera vocata Scotter Eye wyth syeth & rake." The tenants of the manor in the parishes of Messingham on the north, and Scotton on the south, also received instructions to repair their parts "in le Eye & Wiglaw usque Belyngffleate barrys," and Henry Peke received orders to repair his tenement. Orders of this sort are common, not only in this series of court rolls, but several others that I have examined. In the case of copyhold tenants it is obvious that the order was made to hinder the property from becoming deteriorated to the possible loss of the lord, but there seems evidence that orders of this sort were also made as to houses and other buildings which were held by freehold tenure. Following these are surrenders of copyholds in the ordinary form, and one instance—the only one in the rolls—of a merchet or payment on the marriage of a female villain. The entry states that Alice Overye, "filia Willielmi Overey nativi domini de Scotter," came to the court "et petit licentiam se spontanie et voluntarie maritari, cui Dominus concessit licentiam per senescalum et dat domino de marchato ut in capite, v*." So much nonsense has been written on this subject, by grave and learned persons, that it is well to bring forward cases which prove beyond doubt that the *mercheta mulierum* was merely a marriage tax or fee paid to the lord^b by the vassal when he gave his daughter in marriage, or by the woman herself when she was not in the custody of her father, to compensate the lord for being deprived of her services.

^a A lot or water-lot is a certain definite portion of a drain, ditch, or bank, which is repaired by one person. The words are still in every-day use.

^b Spelman believed that the evil custom which these words are said to denote was prevalent in former days in Scotland. His words are "Turpis Scotorum veterum consuetudo, quâ territorii dominus vassalli sponsam primâ nocte comprimeret, floremque carperet pudicitie."—*Gloss* sub voc. *Marchet*. Cowel asserts that the practice was not only "very common in Scotland," but also "in the north parts of England."—*Law Dict.* sub voc. *Marchet*. Sir William Blackstone had evidently come to the conclusion that there was no truth in the story as far as related to his own country, for he says, "I cannot learn that ever this custom prevailed in England, though it certainly did in Scotland . . . till abolished by Malcolm III."—*Commentaries*, xvi. edit. ii. 83. Mr. Cosmo Innes has some remarks upon the question in his very learned *Lectures on Scotch Legal Antiquities*. He sums up thus: "I have not looked carefully into the French authorities, but I think there is no evidence of a custom so odious existing in England; and in Scotland I venture to say that there is nothing to ground a suspicion of such a right," p. 53.

On the following day, the eleventh of October, another court was held for the liberty or those parishes and parts of parishes which were outside the limits of the parish of Scotter, but within its manorial jurisdiction. The business transacted was of a like nature with the foregoing. The tenants of the manor in Messingham were ordered to repair their parts in the bank of the river Trent, and in default for every acre "in latitudine," were threatened with a fine of *iiij*¹. This is a late instance of the word acre being used as a measure of length. It probably means forty perches. In several of the parishes and townships constables are appointed, and in others, as Scotton, East Ferry, East Butterwick, and Manton, constables and "decenarii." These latter officers have long become extinct in this and the adjacent manors. They were an inferior kind of constable having jurisdiction over a decenna, or ten households.^a The word decenna, like hundred, had once probably an exact meaning. In latter times its signification seems to have become very loose. It seems then to have indicated rather a sub-division of the parish or township than ten or any other exact number of homesteads.

The next roll that has been preserved is dated 7 April, 1529. It contains much information of importance to the local genealogist, but I shall only note here such passages as have a wider interest as throwing light on the manners of the time. The first noteworthy entry is a presentation by the jury that Thomas Dykson, chaplain, had made an affray on Oliver Lamming and had hit him with a stick. We also find a widow woman who seems not to have had a surname, as she is called the "Spynner," presented for trespassing with a pig in the south "ynges."^b It was furthermore ordered that no one was to permit his horses to depasture in the cornfields except they were tethered. This direction will not be intelligible to those who are not acquainted with the manner in which agricultural occupations were then conducted. The open fields at Scotter and most of the neighbouring parishes varied much in richness in different parts. There were strips and patches of boggy and poor lands in them which it would have been useless to sow with grain. These patches were depastured in the spring and summer, but if the animals were not securely tethered they wandered among the corn and did much injury. There was probably also some feeling of religion blended with those of a more directly personal kind in the repeated orders of this sort which

^a Cf. Wishaw's *Law Dict.* sub voc. *Deciners*.

^b Ings in this part of Lincolnshire signifies low-lying grass-land. There are ings in most of the neighbouring parishes. Arthur Young, in his *General View of the Agriculture of the County of Lincoln*, p. 179, uses the word. "There are," he says, "at South Somercots, but one thousand acres of ings or common meadow," and it is common in this sense in inclosure awards and local acts of parliament.

occur in the court rolls of this and other manors. There was then and still is among the rural poor an intense feeling of repugnance against any one who wantonly destroyed growing corn. The sentiment is that the person has done a far worse act than if he had wasted an equal amount of property some other way. In the section *De modo inquirendi de peccatis venialibus* in Myrc's *Instructions for Parish Priests* (E. E. T. S.) the questioner asks his penitent—

“Hast þou I-strayd corn or gras,
Or oper thyng þat sowen was?
Hast þou I-come in any sty
And cropped þerus of corne þe by?
Art þou I-wont ouer corn to ryde
When þou myttest have go by syde.”—l. 1499.

The health and comfort of the villagers was provided for in some cases, at least, more efficiently than at present. William Ellys, who had killed a dog and cast the body into the highway to the annoyance of his neighbours, was fined *iiij^d*, and an order was made that no one “permittet Anglice le Byches ire ad largum quando transeunt ad coitu.” Nor was any one to allow his pigs to wander abroad after sunset, but to secure them in “le stythes”; no sheep were to be depastured in Westbekkes and Haverholmhedes, two pastures which were reserved for cows called “mylkbestes”; all dung and wood lying in the common street of Messingham was to be removed, and the River Eye to be cleansed “cum falce et raustro.”

From this period to 8 October, 1548, the rolls are not forthcoming. Here we find little of interest except such things as have been noticed earlier. William Clerke is appointed woodward, an office we have not found mentioned here before; William Elys and Thomas Hallaway are nominated as ale tasters, “tastatores seriuiicie,” and John Haylon as “argillarius,” that is, hayward, herdward, or greve. His duty was to guard the cattle in the open fields, and to present all pound-breaches and strayed cattle.^a

There is again a blank to the year 1553, and from this period the series is pretty nearly continuous down to the middle of the eighteenth century. The first noteworthy entry concerns a certain William Smith who was fined the large sum of *x^s* because he had at Scowthorpe on diverse occasions cursed our Lady the Queen; another violent person, Richard Robert of Messingham, was mulct in the sum of *vi^s viij^d* for keeping his sheep in Lundmayre and rescuing them by

^a The oaths commonly administered to these officers and other officials attached to a manor court may be seen in Sir William Scoggs's *Practice of Court Leet and Court Baron*, 1714, p. 15, *et seq.*

force from the "argillarius" when they were impounded. Among the orders made we find, "Item pena est quod Johannes Raysbeck non manebit in villam istam post festum Philippi et Jacobi apostolorum proximum sequentem sub pena x." Had Raysbeck been a tenant of the manor it is not probable that the court would have had power to make such an order, unless indeed he had incurred a forfeiture either to the crown by felony or to his lord by violating some custom of the manor. In either case it would have been noticed on the roll, but no such entry occurs. We must therefore conclude that he was some stranger who had taken up his abode in the village. There was also a fine of xij^d imposed on all who did not fill up their "furstowk holles," that is the pits made by digging trees and roots out of the peat moss. An order of this kind, but with a much heavier fine, continued in force until the time of the enclosure, about eighty years ago. Such a regulation was most needful, for these holes, which were frequently left by thoughtless persons, were most dangerous to man and beast. A submerged forest, mostly of fir, but containing patches of oak, exists in the low lands near the River Trent, and the tenants of the various manors have enjoyed from time immemorial the right of digging up these trees and roots for gate-posts, building purposes and fire-wood. The holes when left open usually fill with water. A fine of vj^s viij^d was imposed on all persons who should cut "brueras sive alnetas"—furze or alders—growing on the commons for the space of four years, and half that sum was to be inflicted on any one who cut "le spinas in le pratis" for the like time. The furze and brushwood growing on the commons and in the open fields were the principal source from which the inhabitants derived fuel, and strict regulations were made that they should attain their proper growth before they were cut. To sell any material used for making fires out of the manor was visited with the penalty of expulsion, the next entry furnishes an instance of this. It is ordered that a person called Patyson, evidently some wandering stranger, for his Christian name was unknown, should quit the town before the feast of Saints Philip and James under a penalty of x^s, "quia vendebat le fures et turbis [turves] extra villam alienis." These runagate strangers were evidently a cause of much perplexity to the manorial tenants; an order which occurs further down in the same roll that no two inhabitants—families is clearly meant—shall live in the same toft under a fine of vj^s viij^d is clearly directed against the practise of taking in lodgers. The inhabitants of Messingham seem to have given more trouble than all other tenants of the manor by the negligent way in which they kept their highways and buildings. Richard Wylson had to be threatened with a fine of ij^s ij^d for leaving wood upon the high road, and Richard Robynson was

fined x^s because he had taken "omnia ligna sua super le belfrey et jacent in comuni via." The word belfrey as used here is noteworthy. It does not mean, as might not unnaturally have been supposed, a bell-tower, but a shed made of wood and sticks, furze and straw. The word is yet in common use; in 1873 we heard a complaint made to the Lindsey justices of peace sitting in petty sessions at Winterton that the belfrey of . . . was ruinous and liable to fall upon the passers-by.^a

1556.

This year a series of orders for the good government of the tenants of the out-lying portions of the manor was made. As the roll, contrary to the common practice, is made of paper, not parchment, the margin has become worn away, therefore the names of the villages to which some of the regulations refer cannot be discovered. Several important matters of rural economy are treated on, and the document is interesting as a specimen of the dialect of North Western Lindsey in the middle of the sixteenth century.

ffirst yt ys ordered that none of thynhabitantes of the towne of Eastbutterwycke shall cutt downe nor gyt no ellers nor no other woode growynge within the commons of Messingham except yt be for the reparynge and amendinge of trent bankes onelye, vpon payne of euery lode vj^s viij^d and euery burthyng xij^d tocies quoties.

Ellers are elders; a load means a cart-load, and a burthyng as much as a man could carry home upon his back. There is still a popular notion prevalent that when there is danger of the Trent bank breaking, the growing timber of any neighbouring landowner may be felled at once without notice being given, if it be required to save the neighbourhood from being overflowed by the river.

It is ordered that euerye Inhabytant wythin the towneshippe of messingham shall suffyeyentlye mak ther hedges and all other defences lying and beinge betwene neighboure and neighboure on thys syde the feaste of all sanctes next comynge vpon payne of euery default iij^s iiij^d.

It ys ordered that euerye Inhabitant withyn the toune of messyngham shall make ther swyne styes sufficientlye from tyme to tyme hereafter and keipe ther swyne therein vpon the nyght tyme, and set theyme before the swynehyrde euery daye whan he goeth, vpon payne of euery default xij^d tocies quoties.

It ys ordrede that none shall gather any peyse coddess without lycence upon payne of iij^s iiij^d tocies quoties.

^a Simeon of Durham says that Henry I. "ligneam turrin quam Berefreit vocant erexit." *Surtees Soc.* ed. i. 124. In the Inventory of John Nevil of Faldingworth, co. Lincoln, taken in 1590, occurs "the belfrey with other wood xx^s."—Cf. Du Cange, *Gloss*, sub voc. *Belfredus*.

In this and other manors it was a custom to sow yearly a certain portion of the public land with pease for the use of the poor. Strict regulations had to be made as to the time when they were to begin to be gathered, and the hours of the day when it should be lawful to do so. In the Louth churchwardens' accounts for this very year we find a payment *iiij^d* entered "to William East for knylling the bell in harvest for gathering of the pescodes," and in a fine-roll of the Manor of Kirton in Lindsey for 1631 occurs "of . . . Shuttleworth of Holme for gathering pascods contrarie to order, *xij^d*."

Item, yt ys ordred that none shall glene any corne in harueste time vntill the corne be ledde awaye, vpon paine, &c., *iijs iiij^d* toties.

Item, yt is ordered that none dwellynge within the parishe of Scotter shall gyue any sheues of corne in heruest for bynding of corne, but only at the layth dore, and not in the feild, vpon payne of euery sheif *xij^d*.

This regulation was evidently made for the purpose of hindering men from taking sheaves which were not their own. The corn land lay much intermixed in the common fields, but if sheaves were given out at the layth [barn] door no suspicion of dishonest practices could arise. The word *lathe* for a barn is still commonly used.^a

Item, yt ys ordered that euerye inhabytant of Scotter shall put ther geyse in the carre or else clyppe ther wynges or pull them, vpon payne of euerye flocke, *iijs iiij^d*.

The car was low, unenclosed land, much subject to be flooded by water. There are lands called cars in most of the neighbouring parishes, and the word is found in many other parts of England, as for example Morden Car, in the county of Durham, Prestwick Car, in Northumberland, Castle Cars, in the parish of Glossop, in Derbyshire,^b and Gringley Car, in Nottinghamshire.^c The reason for the order was that if the geese were not sent into the car, far away from the corn land, they would fly from the common into the field if their wings were not cut or the larger feathers plucked out of them.

Item, yt ys ordered that no man shall keipe no mares with fooles nor calues within the corne feild after the said fooles or calues be *vj* wekes old, vpon payne of euerye default *xij^d* toties quoties.

Item, yt ys ordred that no man shall keipe aboue three beastes for an oxgang of land, and those in Seawthorpe [which] haue no land not to keipe aboue foure beastes apeice, vpon payne of euerye default *iijs iiij^d*.

Item, yt ys ordred that none shall keipe no manner of cattal in the Eya throughe the severall meadows, vpon paine *iijs iiij^d*.

Item, yt ys ordred that euery man shall make ther Trent banekes, vpon payne of euerye default, *iijs iiij^d*.

^a For its derivation, see Atkinson's *Cleveland Glossary*, sub voc.

^b *Archæologia*, III. 236.

^c *Ibid.* xvi. 361.

1557.

This year contains another series of orders, for the most part relating to the parish of Scotter only. Several of them are repetitions of what has been already given. We extract only such as seem noteworthy:—

ffyrst it is ordered that no man shall driue his cattell unyocked throughe the corne felde, the defalte, iij^s iiij^d.

No man shall graue any turves in thest carre, nor in Rany . . . vpon payne for euery day's work, iij^s iiij^d.

That euery man shall fyll ther furstocke hooles; for euery hoole unfylled, iij^s iiij^d.

That euery man shall haue a sufficient swynne coote, and vse it with his swynne accordyng as it ought to be, vpon payne of euery defalte, iij^s iiij^d.

That euery man shall kepe a sufficient fence agaynst his neboures; þe defalte, iij^s iiij^d.

That no man shall make any footpathe ouer the corne felde; þe defalte, iiij^d.

That no man shall kepe any shepe in ye corne felde vntyll haruest tyme be . . . ; þe defalte, vj^s viij^d.

That euery one dwelling in ye Coote houses or Suswath shall both ring and yock ther swynne before seynt Ellen daye^a next; þe defalt, vj^s viij^d.

It was the custom until quite recent times, even if it be not so in some places at the present, for pigs, when not in the sty or fold-yard, to have wooden yokes or frames fastened around their necks to hinder them from breaking through fences. Porson notices the practise in his *Catechism for the Swinish Multitude*. The questioner asks, "What is the use of that wooden yoke on your neck?" The reply is, "To keep us from breaking through our driver's fences."

That euery man shall sufficiently make their Lydyates in time convenient; þe defalte . . .

The Lidyate was the gate separating the ploughed field from the meadow or pasture. Also the gates at the entrances of a village, across the highway, used to hinder cattle from straying from the unenclosed land among the houses and gardens. Many such gates existed but a few years ago.

1558.

The ordinary business of the court this year requires little notice. The chief offenders were persons who had neglected to "ringe" their pigs, and a certain Richard Holland, who had "taken of straungers vj beas to gyst in ye Lordes commone, and therefore he is in ye mercie of ye lorde iij^s iiij^d." To gyst or gist^b

^a Probably the 3rd of May. See *Plumpton Corres.* (Camd. Soc.), p. 71.

^b See Cowell's *Law Dict.* sub voc. *Agist*. Du Cange *Gloss. Med. Latin*, sub voc. *Agistare*. The word has occasionally been mis-spelt *joist* by persons who were ignorant of its derivation. See Arthur Young's *Line. Agriculture*, p. 235.

is to take cattle in to graze. This a tenant of the manor might do on his own land, but not on the common land, over which he had but a concurrent right with many other persons. Strangers is to be understood not as unknown persons but as persons strange to the manor. The following brief note probably tells of the sweating sickness. "*Nulla inquisitio capta pro Messingham, Manton, and Cleatham, ideo egrotabant sectatores illorum opidorum.*"

1559.

An order was this year made that no one should "hoppell" his horses in the East Car. To hopple signifies to tie together the hind legs of an animal. Cords, made specially for this purpose of horse-hair, are still sold and called hopples. They are principally used for fastening the legs of cows when they are being milked. The East Car was in the near vicinity of much of the best corn land, and the order, no doubt, meant that the horses when there should be made secure by being tied to a stake or tree. The only other order worth notice is one which limits the right of the tenants to stock the common. "*Nullus vocatus a husbandman custodiet ultra quadraginta oves pro vno bouato terre,*" and no cottager was to have more than half that number. In earlier times it is probable that the commons in Scotter and all the neighbouring manors were what is called "unstinted," that is, every one having a common right could turn on as many animals as he chose. As money became more plentiful this was found to lead to much inconvenience and oppression. In the previous times men had commonly kept only as much stock as their land would maintain throughout the year, but now persons having money in hand invested it in sheep, not for their own use—to clothe themselves with the wool, to breed them lambs, and to furnish them with mutton—but for the purpose of selling them again at a profit. Thus the poor husbandman and cottager suffered a heavy wrong, for the number of cattle on the common became so great that his few sheep could not obtain food needful for their sustenance.

1562.

It was ordered that no one should bake or brew in the night time, "*pistaverit aut brasiaverit nocturno,*" under penalty of forfeiting to the lord xii^d. This was a most needful regulation for the prevention of fire at a time when almost all the houses and farm buildings were built of wood and clay taken from the roads and covered with thatch. That no one should plough up "*le meareffurres*" within

the fields, under penalty of ij^d. The meerefurrow or marfur^a in an open field is the narrow strip of grass which separates the various properties. If these are encroached upon the boundaries of estates become liable to dispute. That Thomas Yong should either immediately give up his public house, "domum hospitii," or take out recognizance and licence for keeping an ale house according to statute, and hang up "Signum aut unum le ale wyspe^b ad hostium domus," before the feast of the Invention of the holy cross next coming, under penalty of forfeiture of vj^s viij^d. This Thomas Yong was an East Butterwick man, as is evident from an entry under the year 1574. As East Butterwick is one of the chief ferries over the Trent, connecting Eastern Lincolnshire with the isle of Axholme and Yorkshire, there must have been from early times a house of entertainment near to the ferry landing. It is probable that Thomas Yong hung out his sign or "ale wyspe" on the same spot where the Dog and Gun Inn now stands. It was also presented that Richard Watson and Robert Stutting held each of them a house by copyhold tenure, that the said houses were ruinous, and not repaired according to the custom of the manor, and that William Dauber had stopped up a stream of water, and hindered it from running in its natural course, to the grave injury of his neighbours and others passing on the Queen's highway.

1563.

William Ruslyng and Alice his wife complained against William Ffreeman and Isabella his wife for detaining one "le awmbrey," value vj^s viij^d. John Ellys cast dirt and dung in the Queen's highway, and was fined iiij^d. It was ordered that no one permit "fenum sive stramen" to lie within half a fathom of their chimneys, under pain of vj^s viij^d. Richard Holland permitted his cattle "avaritia sua" to go into Le Inges contrary to the penalty of v^s. And the same person was fined v^s vj^d because he broke a gap in the North Inges, probably to drive the above-mentioned cattle through, and another at Senning flete.

^a Meere, Mere or Mear, signifies a mark or boundary of any kind between one person's land and another's, or between one parish, township, or manor and another. In a fine roll of the manor of Kirton in Lindsey for 1630, we find "of Richard Welborne for ploughing vp the king's meere-balk." In a survey of the same manor made in 1787, persons are spoken of who know their own lands "by meres or boundaries." The road dividing the parish of Winterton, Lincolnshire, from Winteringham is called the mere, Meerehole is a spot on the bank of the river Trent, between the township of Butterwick and Burringham. Cf. *Archeologia*, VIII. 96, XXXVII. 315, XXXVIII. 408, XLII. 159.

^b A bush of ivy or other evergreen has been for ages the sign of a tavern both in England and the neighbouring continental lands. Cf. Singer's Shakespeare, *As You Like It*, act v. scene 4, note.

1565.

George Lee was fined xij^d "quia posuit Canapum^a suum prope ignem in malum et perniosum exemplum," and Thomas Dawson the like sum "quia fregit canapum in cammine." That is, he broke his hemp, or, in other words, separated the fibre from the bark or husk, in his large open chimney. This was a most common practice in the cold nights of winter, but it was an offence which the manor courts did not deal with lightly. The refuse of hemp is highly inflammable, and fires must often have arisen from this cause.

1574.

The wife of Thomas Yonge, senior, of Butterwick, was fined xij^d because "denegavit vendere sereviciam suam Thome Oliuer quando necesse fuit & quando egrotus fuit."

1575.

Thomas Norris fined iij^s iiij^d because he steeped hemp in the water at the North Moor which was bought out of the town.

William Seaton was fined xij^d for gleaning—"quia glenavit"—in harvest time. His offence was not gleaning simply, for this was always permitted, but gleaning before the corn was carried.

1576.

William Robinson was fined viij^d, "quia necuit duos columbos cum reta in hieme."

1578.

Nicholas Huggett was fined xx^s because "occupauit duas leas jacentem prope Messingham hedge contra penam." A lea, whatever may be its general meaning (and the word is used so loosely by our old poets and others that it is not safe to give an opinion thereon), signifies in this part of Lincolnshire not natural grassland but land that has been at one time under plough and afterwards been laid down to grass or gone out of cultivation, and become pasture. In all the cases we have heard of it was land held in common not in severalty.^b Huggett's

^a Recte cannabum, hemp.

^b The survey of the manor and soke of Kirton in Lindsey, taken in 1787, contains a passage which fully bears out the above statement. The original is in the office of the Duchy of Cornwall; we quote from a privately-printed copy. "On the North and South Cliffs [of Kirton in Lindsey] are several commons alled the Old Leys and Lodge Leys, which were formerly plowed; but, by length of time, are

offence was that he had appropriated and, probably, ploughed up some of this common pasture.

Richard Paycocke was fined *iijs^s iiij^d* because "*sinceauit canabum vocatum hemp, emptum extra villam contra penam in le northe more.*" William Hornesbie was fined *vjs^s viij^d* *quia custodiet duos tenentes in vna domo contra penam.*" William Seaton *vij^d* because he had cursed the ale-taster Richard Hill, and *iiij^d* further because his wife had sold ale contrary to assize.

The roll for this year contains a series of regulations for the government of the manor. They are too long to be given in full, and some of them would not be understood by any but those who have a minute knowledge of the neighbourhood. We have quoted all such as seem important :

Imprimis, yt is layd in payne that no man shall teather within anie of the land endes in plough Carre sike, in payne of euery one found in defalt after warning given by the townesmen or other officers appoynted for that purpose to forfeit for euery defalt *xij^d*.

Item, that no man within Scotter shall kepe for one oxgang of land above thre beastes and in Seawthop no man to kepe above two beastes for one oxgang in the North More or in the seuerall feildes in payne of . . . *xij^d*.

Item, that no husbandman shall kepe above fortye shepe for an oxgang of land and no cotcher above twentie in the feildes and lordshippe of Scoter in payne of euery shepe kept above the said rate to forfeit for euery shepe *xij^d*.

Item, that no man shall kepe ther mares and foles above fyve wekes olde after folynge on the northe Carre feilde, nor shall kepe them louse in payne of euery one founde for euery tyme in the same default *xij^d*.

Item, that no man shall take to half parte above one score of shepe in payne to forfeit for euery score of shepe kepte above that number *xx.^s* and so ratable for euery shepe *xij^d*.

Item, that euery man clippe or pull ther geese that are kept within the fallowes in payne of euery one founde in the same default . . . *xij^d*.

Item, that no man shall have anie horse or oxen hopled or vnteathered in the North More or in anie place els vntil the last sheafe be gotten, in payne of . . . *xij^d*.

Item, that euery man sowe ther landes lying at the out sides, both the first and second croppe, that was sowne within twentie yeares now past, in payne of euery one doing contrarie to forfeit for euery lands so vnsowen *xij^d*.

The object of this regulation was to hinder careless and idle persons from permitting a belt of weeds to skirt their land, the seeds of which would have been carried by the wind on the lands of the other tenants of the manor.

become unknown land, and are therefore stocked by Gaits like the other commons. These are usually fed when the field is fallow ; however, when hay or grass is wanted for their working oxen, they turn them upon the leys in the corn fields, but send servants to take care of them and prevent their trespassing on the corn," p. 264. The manor of Scotter adjoins the manor and soke of Kirton in Lindsey.

Item, that no man shall breake any other man's hedges or gett anie woode in the Lordes woode without leave of the Lord or his lawfull foster,^a in payne of euery one founde in the same default xij^d.

Item, that no man shall break any hempe in anye howse or chimney, in payne of iij^s iiij^d.

Item, that euery man from tyme to tyme kepe ther chimneys in good repaire and swept from tyme to tyme, in payne of iij^s iiij^d.

Item, that euery man shall sowe one peck of pease for one oxgang of lande to the vse of the poore in such place as shall be from year to year by comon assent agreed vpon, in payne of xij^d.

Item, that euery man shall have their swinecotes sufficiently made, and ther swine to be sett before the swinehirde, and to be styed vppe before sonne sett, and so to kepe them styed till sonne rise, in payne of xij^d.

Item, that no man synke ani hempe that is bought out of the lordshippe within the Northe More, in payne of euery one founde in the same default iij^s iiij^d.

Item, that no man shall kepe after Mayday next two tenantes in one tenement, in payne of vj^s viij^d.

Item, that no man gleane ani corn untill the furlonge be gotten, in payne of xij^d.

Furlong here signifies not a measure of land, but a piece of land, belonging to one person in the open field. Cowell^b gives an instance of the third of Elizabeth of a furlong containing "per æstimationem quatuor acras."

Item, that no man gleane anie beanes or pease anie time but of their owne in payne of . . . xij^d.

Item, that none shall geather any wolle before eight of the clocke in the morning in payne of xij^d.

That is pick up locks of wool on the commons and in the pasture-fields. The commons were in many places covered with furze bushes, and much wool was torn by them from the sheep. This wool belonged by custom to the poor who did not keep sheep, but they were only permitted to gather it in the day time, least they should catch the sheep and pluck the wool off their backs. Wool-gathering yet goes on in many places even on enclosed lands, but there the practice is continued by favour of the occupier, not under any pretence of right.

Item, that no man shall kepe at anie tyme hereafter anie gelt bestes with the kyne, but sett them downe all aboue yearenings in payne of xij^d.

^a A contracted form of forester, but no mark of contraction is put over the word, and it was probably pronounced as written. Foster is a surname in the neighbourhood.

"An horne he bare, the baudricke was of grene:

A foster was he soothly as I gesse."

Chaucer, *Prologue to Canterbury Tales*.

^b *Low Dict.* sub *voc.*

That is, they were to send them into the pasture appropriated for bullocks, not to keep them in the cow-pasture, which was richer land.

Item, that no man shall teather anie younge stagges^a or fylles within the corne feilde in payne of xij^d.

Item, that none shall gett anie Rabbettes or Connyes within the Lordes warrant in payne of xij^d.

Item, that everye man shall burne within his owne lande in Houllandes, and not vppon other mens landes, that is sowne with rye, from Kirton brigges to Wheateroft, in payne of xij^d.

Where the land in open fields is divided into very small strips, it was not uncommon for the weeds from several properties to be gathered into one heap or "clamp" for burning. Some persons, it seems, had been burning rubbish on their neighbours' land after seed-time, and the above order was promulgated in consequence.

Item, that no man of the inhabitants of Scoter or Scawthorpe shall fishe nor go a ducking within the Lordes seuerall watters, viz. from Henrye Mawmells closse vntill Wigglesworthe hoow-hill, in payne of xij^d.

Item, that no man shall teather within the north Inges, or about the Trent bankes or groves^c vntill the haye be gotten awaye in payne of ij^s.

Item, that all men of Susworth or the Coate houses ryng the swine that they doe not wroote on neither of the Inges or anie place els in payne of iij^s iij^d.

Item, that no man shall kepe anie bease but afore the herd yearlye in payne of iij^s iij^d.

No one was to keep any oxen except such as formed a part of the herd which were in the custody of the herdward. A needful regulation, for had it not been so the herdward would not have had personal knowledge of all the cattle on the commons, and when strays from neighbouring manors had come in he might not have recognised them.

Item, that everye man sweepe ther chymnes yearly fower tymes in payne of vj^s viij^d.

Item, that no man shall gett anie bottells of furies, and to pay for euerye bottell that is gotten iij^d.

Item, that no man shall have ani crowe nestes or pye nestes building in their groundes, but pull them downe before maydaye yearlye in payne of euery nest xij^d.

Item, that no man make no dunge hills within the Quenes hyewaye on payne of euerye hill xij^d.

^a Colts.

^b Warren.

^c The small portions of cultivated land between the Trent bank and the highway are called groves. The word is no doubt related to grave, to dig, because this land was the place where soil was graved from for repairing the banks.

Item, that no man shall mawe in Sennyfleete, South Inges, or North Inges before he wadde his owne on bothe sides in payne of *iiij^d*.

Before each man began mowing his grass for hay, he was to mark off the exact limits of his own land by wad-sticks, that is tall rods, so that there could be no doubt as to the exact boundary between one piece of land and another.

Item, that no man shall plowe any mans land awaye in the feilde in payne of euery furre ^a plowed awaye hereafter *iiij^d*.

Item, that all men shall burye ther dead cattell within one daye after ther deathe in payne of . . . *xij^d*.

Item, that no man shall put anye horse or bease within the Inges before the last cocke of haye be gotten awaye in payne of . . . *xij^d*.

1579.

Andrew Horne of Messingham was fined *iiij^d* because he permitted mendicants and illicit persons to lie in his house at night, and William Webster and others were fined a like sum for cutting "le bele staffes in silva domini." What "bele staffes" were is by no means certain; it has been suggested that they were staves for the wheels of the church bells.

1581.

A series of orders for Butterwick very similar to the preceding. No hemp or line was to be broken in any house nor was it to be dried by the fire in an oven or a chimney.

1583.

A man called . . . Pattynson was fined *xij^d* because he permitted a scabbed horse to go upon the common; and another person, whose name has perished, was fined a like sum for allowing "two cades"—that is lambs brought up by hand—to trespass in the sown field.

1585.

Robert Stutting was fined *iiij^d* *iiij^d* "quia locutus fuit contemptuosa verba in aperta curia."

1586.

Among the orders made this year are the following:—

That no man throwe no kytte ^a or caryon vnto the heigh waye, to the annoyaunce of his neighbours, but shall pitt ^b the same vpon paine of everye defalte *xij^d*.

^a A furrow.

It is layd in paine þat Edward Post do make his house which is in ye tenour of Robert Coole in sufficient repaire before ye next courte in paine of xl^a.

It is layd in paine, all men that haue two tenaunnts in one house shall voyde one of them before Mayday next in pain of xx^a.

We present John Foster for that his wife suffereth mens servantes to be in her house at vnconvenient tymes ij^a.

Four burleymen were appointed this year, namely, Richard Loddington, William Shadforth, Robert Dawbney, and William Paycock, to see the above and other orders put in force.^c

1587.

Matthew Hayton was fined xij^d "quia messuit le brackens antequam campana pulsata fuit contra penam," and Thomas Anderson vj^d "quia glenebat & collegebat granum vocatum pease in harvest tyme contra penam."

1588.

Richard Paycock fined xij^d "quia legauit equum suum prope molendinum ventosum contra penam."

1592.

The widow Tomlinson fined vj^d because she put line to steep in water where cattle were wont to drink to the injury of her neighbours.

1594.

William Burgham fined vj^d. because "permisit seruietes sui colligere fabas et pisas in tempore messis."

1598.

It is laide in payne that Thomas Davye shall avoyd his tenant William Haworth, who is knowne to be a petty bryber, before the xth day of May next in payne of forfeiture to the Lord xx^a.

^a Now pronounced ket, unwholesome meat, carrion. A person who deals in bad meat is called a ket-butcher. The *corrus corone* is called a ket craw.

^b Pit, to bury. "It is ordered that every inhabitant in Bottesford and Yadlethorpe that haue any cattle that die of the fellon or morren upon the comons or wastes of Bottesford and Yadlethorpe shall sufficientlie pitt the same to the sight and discretion of the cargraues or two or three sufficient and honest men of the said tounes, and likewise shall burne the place where the said cattle dye, vpon payne for euery default x^a."—*Bottesford Manor Records*, 1617.

^c There is some obscurity as to the derivation of the word burleyman, and as to the duties which devolved upon those who filled the office. They are mentioned in the court roll of Kirton-in-Lindsey, of the 20th of Elizabeth. Cf. *Hist. MSS. Com. Rep.* iv. 368; Whitaker's *Whalley*, ed. 1876, ii. 227; *Athenæum*, 1879, 12th July, p. 41, 26th July, p. 115; G. L. Gomme's *Index to Municipal Offices*, pp. 33, 45.

1599.

John Willson was fined ij^a because his wife had dug up a boundary stone—"unum le bounder"—between him and his neighbours.

It is laide in paine by the Jurie that the inhabitantes of Messingham which have any water gutters betwene neighbor and neighbor shall sufficiently ditch and scower the same as of^t as nede shall require in paine of euery roode to the contrarie iij^a iiij^d.

It is laid in paine that none shall mowe any thack^a or digg any furr or oke in the same carr to sell to any stranger dwelling out of the said townships [Messingham and Butterwick] in paine of euery offence for euery lood x^a.

It is laide in paine that none of the said inhabitantes shall grave or shoote^b any baggs^c beneath miclehowses or triplinghowses or beneath any sik^d between them in paine of xij^d.

1609.

Robert Atkinson fined xij^d because "tetheravit unam vaccam apud le water mill."

1630.

Several regulations for the good government of the manor were made; they reproduce for the most part with some variation of words orders that had already been given. There is one exception, however, that is noteworthy as shewing that the tenants had not full rights of cultivation as to that portion of the manor which was held in severalty. That it relates to these lands and not to the public pastures is evident, for they could not be broken up without the consent of the whole parish. The entry runs—

That noe man shall breake any pasture withoute moste mens consent, in payne of euery defalte iij^a iiij^d.

^a Coarse grass growing on the moors, so called, perhaps, because it was frequently used for thatching buildings instead of straw.

^b To grave means here to dig with a common spade, to shoot, to pare the surface with a paring spade.

^c Peat cut for fuel. The upper portion consisting of peat intermixed with roots of grass, when cut for fuel, was called bags, the lower, consisting of peat only, turves. Bagmore, a place in the parish of Burton-on-Stather, probably derives its name from this source.

^d A pool of stagnant water or very sluggish stream is here meant. Before the enclosures there were many such places surrounding the latter of the places indicated in the text. Their sides were covered by thickets of willow, alder, and birch.

"It neither grew in syke nor ditch,

Nor yet in ony sheugh;

But at the gates o' Paradise

This birk grew fair enough."

"The Wife of Usher's Well," in Scott's *Border Min.* ed. 1861, ii. 258.

XIX.—*On the Use of the Greek Language, written phonetically, in the early Service Books of the Church in England; and on the earliest system of Musical Notation upon lines and spaces, one hitherto unnoticed, and seemingly peculiar to English use.* By WILLIAM CHAPPELL, Esq. F.S.A.

Read May 11, 1876.

WHILE collecting materials for a new history of music I had occasion to examine many of the earliest Psalters and Books of Antiphons for the service of the English Church, and then noted three distinctive peculiarities, which seemed worthy of attention by the literary antiquary and by the historian. The first was, that parts of the service, such as the *Gloria in excelsis* and the Nicene Creed, had been sung occasionally in Greek, and that the Greek was written phonetically in English characters. The second, that the hymns and sequences differed from those which had been sung on the continent of Europe, and therefore few, if any, are included in the printed collections by Daniel, by Mone, or Morel; and, further, that many of them are remarkable for the intermixture of Greek and of Græco-Latin words. Not only did our ancestors substitute *protus*, *deuterus*, *tritus*, and *tetardus* for *primus*, *secundus*, *tertius*, and *quartus*, but also employed such addresses to the deity in their hymns and sequences as "*Kyrie eleison, o theos agye*"—"Pater, creator omnium, tu theos ymon"—"*Pater ymas te exoramus*;" half Greek and half Latin. The third peculiarity was that, in the eleventh and twelfth centuries, the music of new hymns was written upon four lines and spaces, and yet upon a different system from that which prevailed over Europe at subsequent dates. In the later and general system only three letters, or their representatives, were, as they still are, employed upon the staff, viz. F, c, and G; but they had not in early times the distinctive meaning which they now possess—that F is for the bass octave, c for the tenor octave, and G for the treble octave; for often c was placed under F. In the English system, which seems to have preceded not only the square and diamond-shaped notes, but also all other uses

of four lines with the three intermediate spaces, any one of the seven letters, A, B, C, D, E, F, G, and the square or the round B, for natural or flat, were placed not only upon a line, as now, but perhaps as frequently upon a space. We find A, or D, as commonly as F, C, or G, and the letter was transferred from one line or space to another, upwards or downwards, whenever the descent or ascent of the voice would otherwise have exceeded the boundary of the staff of four lines. By this means the use of ledger lines was avoided.

Specimens of this written music are here shown. They are reduced from a folio volume by photography, but other examples will be found among the MSS. in the British Museum,—as a Hymn to Saint Mildred, in Harleian MS. No. 3908, of the eleventh century; again, in the Cotton MSS., Caligula A. 14, and Julius, A. vi.; and in the beautifully written St. Alban's MS. (MSS. Reg. 2 B. iv.), which also affords ample examples of the substitution of Greek words for Latin. The photographs now exhibited are all taken from the Bodleian MS. No. 775, by the kind permission of the Rev. H. O. Coxe, M.A. Bodley's Librarian. The MS. seems to be one of those given to the University of Oxford by Sir Thomas Bodley. We may infer that it had belonged to Winchester Cathedral, from the hymns addressed to S. Swithun and S. Athelwold, who were bishops of that see. The date of the volume is proved by the Third Litany, in which we find, "Vt æpelredum regem et exercitum anglorū conservare digneris te [rogamus]" (fol. 19). (See Plate XVIII.) The writing is therefore anterior to the death of Ethelred II. in 1016, and we may attribute the Δόξα ἐν ὑψίστοις θεῷ, which is written phonetically on folio 72 of the MS.^a to the first quarter of the eleventh century. The musical notation seems not to be altogether so early, for, in some cases, new hymns have been written over old ones; but still the writing is in no case later than the twelfth century. Except as to the hymns, the notation in the MS. is by those indefinite guides for chanting, which were originally termed *pneumata* (breathings), and later in Latin, *neumæ*, Anglice *neumes*. They are signs for the rise, fall, or continuance of the voice, but, when without lines, they do not indicate the note to which the voice should rise or fall; therefore they are only fitted for indefinite recitation, and not for music proper. The probability is, that the improved notation was suggested by an absolute requirement for definite musical notes for performances on the organ. In the year 951, the great organ at Winchester Cathedral had four hundred pipes, which were controlled by forty keys

^a A fac-simile of this, and of the Third Litany, which supplies the date, will be found herewith. (See Plate XIX.)

X p̄ audm̄os. v. libera nos domine.
S ca maria. or. p̄ crucem tuam libe
S ce gabriel. or. ra nos domine.
S ce iacob. or. p̄ occisiones rogatus
S ce laurenti. or. audm̄os.
S ce maffio. or. v. i pacem nobis dones
O m̄i fa. v. rogatus audm̄os.

LETANIA TERTIA. **V** i domum apostolica
X p̄ audm̄os. iii. in sca. religione con
S ca maria. iii. servare digneris ro
S ce p̄phab. iii. i actam tuam in
S ce iohannes. or. macilaram custo
O m̄i Sa or. p̄ nob. iii. dme digneris rog
P ropius esto. **V** i ap̄spiciam regem
 parte nob̄ dñe
A bonni malo conferuare digneris et

V i sanctam nobis Agnus dei. dona nob̄
 dones rogatus. pacem.

V i pluiam nobis Agnus dei. miserere
 dones rogatus nobis.

V i cadi sc̄ritate X p̄ audm̄os.

nobis dones. C̄ ymelafon.

V i actis capeno X p̄ dafon.

bonam nobis C̄ ymelafon.

dones terrog. Alle lya. p̄

V i fructu terre Confitemini domino
 nobis dones. quoniam bonus quo

E i i d̄ terrog. nam in sa. culum

A gnus dei qui misericordia eius.

tollis peccata. Laudate dominum.

mundi p̄ro tractus. l. l. l. l. l.

nobis domino. Laudate dñm om̄s gētes.

and ten stops. It must have been impossible to make efficient use of such an instrument without an exact indication of the chords which were to be played upon it. Wolstan, to whom we owe the extant contemporary description of that organ,* was also the author of a musical treatise, "*De tonorum harmonia*," and this work is mentioned by William of Malmesbury as "*valde utile*," even at the date when he was writing. It has never been found an easy task to harmonize Church tones, and surely no such treatise could have continued in use for more than a century without distinct and intelligible musical examples. It is not, however, to the musical part of the subject that I would now draw attention, so much as to the phonetic Greek. The latter may not only be useful in determining the former pronunciation of that language in England, but may likewise assist in deciding similar questions as to our own. Theologians also may take interest in the Greek versions, as they were probably introduced in the seventh century, although the language may have been corrupted in its descent to scribes of the tenth and eleventh centuries.

There can be but little doubt as to the main source from which the cultivation of the Greek tongue sprung up in England. It was in the year 668 that Pope Vitalian sent Theodore, as Archbishop of Canterbury, and with him Hadrian, as Abbot of the Monastery of Saint Augustine's, then named Saint Peter's, at Canterbury. Theodore was a Greek, and Hadrian, who was born in Africa, had been sent with him (according to Bede) to take especial care that Theodore should not introduce "anything contrary to the true faith into the Church over which he was to preside." In other words, he was to conform entirely to the Western, and not to the Eastern, Church; for even a Pagan would not have been more obnoxious at Rome than a Christian who differed from the Western Church in the calculation of Easter. "Forasmuch," says the Venerable Bede, "as both Theodore and Hadrian were well read in sacred and in secular literature, they gathered a crowd of disciples, and there daily flowed from them rivers of knowledge to water the hearts of the hearers; and, together with the books of holy writ, they also taught them the arts of ecclesiastical poetry, astronomy, and arithmetic." "A testimony of which is," he continues, "that there are still living at this day some of their scholars, who are as well versed in the Greek and Latin tongues as in their own, in which they were born." (*Eccles. Hist.* iv. 2.)

It is probable that the Greek was written into the Service Books phonetically as a provision for priests who might not understand the Greek language. Bede

* Preceding his metrical account of the miracles of S. Swithin. See MS. Reg. 15, c. vii. fol. 54, or *Acta Sanctorum Ordinis S. Benedicti*, by Mabillon, fol. Paris, 1685. *Saeculum*, v. p. 630-1.

says, that "Theodore was the first Archbishop whom all the English Church obeyed;" but it does not yet appear that the custom of singing in the Greek language, or the peculiar system of writing music, extended beyond the province of Canterbury.

When any two persons wrote down phonetically, they would not agree upon all points; and it would, therefore, have been interesting to compare a northern version, if such a one could have been found. In the mean time, two phonetic versions of "Glory be to God on high," or "in the highest," are offered; the one from Winchester, and the other from Canterbury. The second MS. which is also of the first half of the eleventh century, is from Hadrian's own monastery of Saint Augustine's, and is now in the public library at Cambridge (G. g. 5, 35). It contains, in addition, the Nicene Creed, and two other examples in Greek.

As the scribes of phonetic copies often join several words in one, after the example of the Codex Alexandrinus and other early manuscripts, I have written the Greek under the following example to save the reader's time in disentangling them. It will be found essential to read the phonetics with the northern and continental pronunciation of the vowels. The Greek *upsilon*, whether aspirated or not, is represented by our letter "y," often formed like the Greek capital letter, and so a true "y Grec." The exception is when two vowels come together. In such cases the Greek *ou* is expressed by our letter "u," which we may assume to have been pronounced "oo," with the lips elongated, as in Italian at the present time, and sometimes in our own tongue. The northern pronunciation of the vowels proves the truth of Puttenham's remark, that, although in the reign of Queen Elizabeth it was not thought expedient to adopt the pronunciation of even the best of "our Northern Clerks, yet," says he, "no man can deny that theirs is the purer English Saxon at this day."

Without further preamble, permit me now to turn to the manuscripts. The Winchester copy of the "Gloria" is headed, "YMNUS ANGELICUS GRECA LINGUA COMPOSITUS." (See Plate XIX.)

"Doxa enypsisitis theo ke episgis irinien antropis eudochia. Enumense
[Δόξα εν ὑψίστοις θεῷ, καὶ ἐπὶ [τῇ]ς γῆς εἰρήνη, ἐν ἀνθρώποις εὐδοκία. Αἰνοῦμέν σε,]
Eulogumense Proskinumense Doxologumense Eucharistumensi diatin megalinsu
[Εὐλογοῦμέν σε, Προσκυνοῦμέν σε, Δοξολογοῦμέν σε, Εὐχαριστοῦμέν σοι, διὰ τὴν μεγάλην σοῦ]
doxan. Kyrie basileu epuranie thee pater pantocrator. Kyrie ye monogeni isu criste
[δόξαν. Κύριε, βασιλεῦ ἐπουράνιε θεέ πατέρ παντοκράτωρ. Κύριε, υἱὲ μονογενῆ Ἰησοῦ Χριστέ,]
ke agion pneuma. Kyrie otheos Oamnos tutheu. O yos tupatros. O eron tin amartian
[καὶ ἅγιον πνεῦμα. Κύριε ὁ θεός, Ὁ ἀμὸς τοῦ θεοῦ, Ὁ υἱὸς τοῦ πατρὸς, Ὁ αἴρων τὴν ἁμαρτίαν]

Tu solus altissimus Qui respicis humilia
in celo. Gloria. Ihu xpo. A. L. I. A.

GLORIA INEXCELSIS DEO. ET IN TERRA.

IN UNUM DEUM COLENTES. Laudamus te.

IN ETERNUM UENERANTES. Benedicimus te.

IN PATREM IN FILIO. filium in patre. Spiritum

in ueroque. Adoramus te. Danc unam

summam quod dicatam amantem. O lon

ficamus te. Sanctam maiestatem tua.

GLORIA INEXCELSIS DEO. ETERNITATI

GLORIA SANCTORUM LAUSQUE ANGELORUM

QUAE IN SECUTUS EST SANCTUS IOHANNES. Lau

damus te. O deus acutus laus que bea

sanctorum quem laudat sanctus iob.

Benedicamus tibi laudes deprecato

res tuas cum sancto adoramus te.

Adoramus. Angelicus tibi adstat
clansimus ordo. cum quo te semper
glorificat sanctus iohannes glorific.

ITALUS ANGELICUS GRECA LINGUA COMPOSIT.

DOXA CRYPSISTIS THEO. K. C. P. S. G. I. N. M. I. N. I. C. I.

ANTROPIUS CUDICHIA ENYMPENSE. Eulogu

mento. Pros kinumense. D. O. X. O. L. O. G. U. M. E. N. S. E.

Eubartu mensi diatin megalinsu doxan

K. Y. M. O. basilicu epurano thee patry panto

craton. Y. M. O. Y. E. M. O. N. O. G. E. N. U. C. I. S. T. E.

keagon pneuma. Y. M. O. O. C. E. O. S. O. A. M.

nos tuteu. O. Y. O. S. u. p. a. t. o. r. O. e. r. o. n.

an amastian uicofnu elafon ymas.

O. e. r. o. n. a. s. a. m. a. r. t. a. n. c. u. c. o. s. i. n. u. P. r. o. s. d. e. x. e.

an dca simon. O. k. a. m. e. n. o. s. e. n. d. e. x. a.

u. p. a. t. o. r. e. l. e. x. i. s. o. n. i. m. a. s. O. a. s. s. i. m. o. n. o. s.



tucosmu, eleison ymas. O eron tas amartian [sic] tu cosmu Prosdexe tin dei sinimon.
 [τοῦ κόσμου ἐλέησον ἡμᾶς. Ὁ αἰρων τὰς ἀμαρτίας τοῦ κόσμου, Προδέξαι τὴν δέησιν ἡμῶν.]
 Okatimenos en dexia tu patros eleyson imas Otis simonos agios, si monos cyrrios,
 [Ὁ καθήμενος ἐν δεξίᾳ τοῦ πατρὸς, ἐλέησον ἡμᾶς Ὅτι σὺ εἶ μόνος ἅγιος, σὺ εἶ μόνος κύριος,]
 si monos ypsistos Isos Cristos sin agion pneumatini is doxan theu patros, Amin."
 [σὺ εἶ μόνος ὑψίστος, Ἰησοῦς Χριστός, σὺν ἁγίῳ πνεύματι, εἰς δόξαν θεοῦ πατρὸς, Ἀμήν.]

Two versions of the above are extant, the one in MS. Harl. 5642, fol. 47 v, and the other in the Canterbury MS. now in the Public Library, Cambridge. The Canterbury version is as follows :—

"Doxa enipsisistis theo ke epis gis yrine enantropis eudochia, enumense, eulogumense, pros kinumense, doxologumense, eucharistumensi diatin megalinsu doxan. Kyrrie basileu epuranie thee patir pantocrator. Kyrrie ye monogeni isu xpe, ke agion pneuma. Kyrrie o theos, o amnos tu theu, oios tu patros. O eran tis amartian tu cosmu eleison imas. O eran tis amartian tu cosmu prosdexe tin deisin imon. O catimenos en dexian tu patros eleison imas. Otis simonos agios, si monos kirrios, si monos ipsistos, Ysos Cristos, sin agios pneumatini is doxan theu patros, Amin."

The following version of the NICENE CREED is written upon the same page as the last, with the Latin superlineation :—

"Credo in unum deum patrem omnipotentem factorem celi et terre, visibilium omnium et Pisteugo isenan theon patiran pantocratoran pyitin uranu ke gis oraton te panton ke invisibilium, et in unum dominum iesum cristum filium dei unigenitum; et ex patre a oraton ke is enu kyrrion ison christon ton ion tu theu ton monogenin, ton ek tu patros natum ante omnia secula. deum de deo, lumen de lumine, deum verum de deo genithenta propanton ton eonon theon ek theu fos ek fotos theon alithinon ek theu vero genitum, non factum, consubstantialem patri, per quem omnia facta sunt, qui propter nos alithinu genithenta upyrthenta omo usion to patri, diu ta panta egeneto ton dimastus homines et propter nostram salutem descendit de celis et incarnatus est de spiritu anthropos ke diatim meteran sotirian katelthonta ek ton uranon kes sarchothenta ek pneumatos sancto et Maria virgine et homo factus est. Crucifixus etiam pro nobis sub pontio pilato agio Kemarias tis parthenu keen antropis anta. Staurothenta te yperimon epi pontiu pilatu passus et sepultus est et resurrexit tertia die secundum scripturas, et ascendit in celum. ke patonta ketafenta. ke anastanta titriti ymera kata tas grafas keanelthonta istus uranus sedit ad dexteram patris, et iterum venturus est cum gloria iudicare vivos et ke katezomenon en doxian tu patros ke palin erchomenon meta doxis krine zontas ke mortuos, cujus regni non erit finis. et in spiritum sanctum, dominum et vivificantem, qui ex necrus utis basiliis uk estetos ke is to pneumatoni agion to kyrrion ke zo opion to ek tu patre filioque procedit. qui cum patre et filio simul adoratur et conglorificatur. patros ke io ek poreugomenon ton sin patri ke io sin pros kynumenon ke sin sindoxa

qui locutus est per prophetas, et unam sanctam catholicam et apostolicam ecclesiam. confiteor
 zomino to lalisan dia ton propheton is mian agian katholikyn ke apostolicen ecclesian omo logo
 unum baptisma in remissione peccatorum, et expecto resurrectionem mortuorum et vitam venturi
 en baptisma is athesin amartion Pros doko anastasin nekron ke zoin tu mellontos
 seculi. Amen.
 eonos, Amin.

A second phonetic copy of the Nicene Creed will be found in Addit. MSS. 23,892, fol. 51-53, in the British Museum. The red ink has there become so pale as to be in parts scarcely decipherable.

The following Litany of the Saints (entitled the Third Litany in the Winchester MS.) is copied from the last leaf of the manuscript known as the Psalter of King Ethelstan, but which is partly of earlier date. (Cotton MSS. Galba A. xviii. fol. 200.) The phonetics are again interlined with the usual Greek spelling, to save the reader's time.

+ HIC PRECIPUNT GRECORUM LETANIE:

Xp̄e epacus onimin.
 χριστὲ ἐπάκουσον ἡμῶν.
 Aie michael euxe yperimon.
 Ἄγιε μιχαήλ εὕξαι ὑπὲρ ἡμῶν.
 Aie gabriel euxe yperim on.
 Ἄγιε γαβριήλ εὕξαι ὑπὲρ ἡμῶν.
 Aie raphael euxe yperimon.
 Ἄγιε ραφαήλ εὕξαι ὑπὲρ ἡμῶν.
 Aie maria euxe yperimon.
 Ἄγια μαρία εὕξαι ὑπὲρ ἡμῶν.
 Aie petre euxe yperimon.
 Ἄγιε πέτρε εὕξαι ὑπὲρ ἡμῶν.
 Aie paule euxe yperimon.
 Ἄγιε παῦλε εὕξαι ὑπὲρ ἡμῶν. et rl. [reliqui.]
 Pantas yaies euxe yperimon.
 Πάντες ἅγιοι εὕξασθε ὑπὲρ ἡμῶν.
 Pleos genuce fise [sic] ymas cyrie.
 Πλεως genuce καὶ ῥύσαι ἡμᾶς κύριε.
 Pleos genuce lutrose ymas cyrie.
 Πλεως genuce καὶ λύτρωσαι ἡμᾶς κύριε.

Apopantes cacu lutrose ymas cyrie.
 Ἀπὸ παντός κακοῦ λύτρωσαι ἡμᾶς κύριε.
 Diatus taurusu lutrose ymas cyrie.
 Διὰ τοῦ σταυροῦ σου λύτρωσαι ἡμᾶς κύριε.
 Amarthuluse paraca lumen epacus onimin.
 Ἀμαρτωλοὶ σε παρακαλοῦμεν ἐπάκουσον ἡμῶν.
 Inagrinin [sic] dosisse paraca lumen epacus
 Ἰνα εἰρήνην δώσῃς σε παρακαλοῦμεν ἐπάκουσον ἡμῶν.
 Ygie [sic] tutheuse paraca lumen epacus
 Τιὲ τοῦ θεοῦ σε παρακαλοῦμεν ἐπάκουσον ἡμῶν.
 Ao amnos tutheu o errontin [sic] amartiastu
 Ὁ ἀμνὸς τοῦ θεοῦ ὁ αἴρων τὰς ἀμαρτίας τοῦ
 cosmu eleison imas.
 κόσμον ἐλέησον ἡμᾶς.

The above is followed by the *pater noster* in the manuscript :—

“ HIC INCIPIT PATER NOSTER JN LINGUA GRECORŪ.

Pater imon oynys uranis agiastituto onomansu, elthetu ebasilias genit thito to
 Πάτερ ἡμῶν ὁ ἐν τοῖς οὐρανοῖς ἀμασθήτο τὸ ὄνομά σου, ἐλθέτω ἡ βασιλεῖα σου, γενηθήτω τὸ
 theli mansu, os sen uranu. kepitigis tonartonimon tonepussion. dos simin simero
 θέλημό σου, ὡς ἐν οὐρανῷ καὶ ἐπὶ τῆς γῆς, τὸν ἄρτον ἡμῶν τὸν ἐπιούσιον δὸς ἡμῖν σήμερον,
 keaffi simin ta offalimatu imon Os ke jmis affiomen tusophiletas jmon. ke mies ininkis
 καὶ ἄφες ἡμῖν τὰ ὀφειλήματα ἡμῶν ὡς καὶ ἡμεῖς ἀφίμεν τοῖς ὀφειλέταις ἡμῶν, καὶ μὴ εἰσενέγκης
 imas isperasmon. Ala ryse jmas apitu poniru.
 ἡμᾶς εἰς πειρασμόν, ἀλλὰ ῥῦσαι ἡμᾶς ἀπὸ τοῦ πονηροῦ.

The last is followed by the Apostles' Creed :—

Pistheu istheu patera panto cratero ce is Criston ihū yon aututon mono-
 Πιστεύω εἰς θεὸν πατέρα παντοκράτορα, καὶ εἰς Ἰησοῦν Χριστὸν [τὸν] υἱὸν αὐτοῦ τὸν μονο-
 genton quirion imon tongenegenta ecpneumatus agiu cemariatis parthenu ton epipontio
 γενῇ τὸν κύριον ἡμῶν, τὸν γενηθέντα ἐκ πνεύματος ἁγίου καὶ μαρίας τῆς παρθένου, τὸν ἐπὶ Ποντίου
 pilatu staurothentecta finta tetríte imera anastanta egnicron anaunta istos ura-
 Πιλάτου σταυρωθέντα καὶ ταφέντα, τῇ τρίτῃ ἡμέρᾳ ἀναστάντα ἐκ νεκρῶν ἀναβάντα εἰς τοὺς οὐρα-
 nos catimenon indexia tu patros oten erchete crinezon tas cenicros ceispreuma[sic] agion
 νοὺς, καθήμενον ἐν δεξιᾷ τοῦ πατρὸς, ὅθεν ἔρχεται κρίναι ζῶντας καὶ νεκρούς, καὶ εἰς πνεῦμα ἅγιον
 agria fis inamartion sarcos anasta. amin.
 ἀφεσιν ἁμαρτιῶν, σαρκὸς ἀνάστασιν, ἀμήν.

The last piece in the manuscript is the *SANCTUS*, which is now left unfinished, owing to the following leaf having been torn out. All that remains is—

Agios agios agios cyrus otheos sabaoth plyris urano cegaetis doxis . . .
 Ἄγιος ἅγιος ἅγιος κύριος ὁ θεὸς σαβαώθ, πλήρης ὁ οὐρανὸς καὶ ἡ γῆ τῆς δόξης . . .

This is again found in the Harleian Manuscript No. 5642 but written in Greek uncial letters, four of the words being there omitted. If any one should be curious in the acquisition of medieval Greek, he could hardly do better than to study the Greek and Latin vocabulary of this Harleian Manuscript, and of a Greek and Latin Dictionary on parchment, in uncial letters, seventh century, Harl. No. 5792.

In conclusion, it may be observed that similar examples of Greek phonetically written have been found in manuscripts of St. Gall and of Einsiedeln,

which are attributed to the ninth century. Also in several manuscripts of the Gallican Church. An entire mass was sung in Greek at the royal Abbey of Saint Denis, under the idea that the patron Saint of France was Dionysius the Areopagite, a Greek, who is mentioned in the Acts of the Apostles as one who believed, and whose name appears in the Calendar of Saints as Bishop of Athens and martyr. This custom was continued to a comparatively recent date. D. Martène, in his *De antiquis Ecclesiæ Ritibus* (Antwerp, 1736) cites divers examples of the employment of the Greek language in certain parts of the Gallican liturgy, and says: "Hodie, in percelebri S. Dionysii in Francia monasterio, epistola et evangelium in quinque præcipuis festivitatis græce et latine pronunciantur. In octava vero S. Dionysii quidquid a choro in missa præcinitur totum græco sermone canitur." (vi. p. 281 D.)

One noteworthy feature of the Winchester manuscript is, that it exemplifies the antiquity of Salisbury Use. The sequences, which are written with neumes upon four lines and spaces, are nearly all to be traced through other manuscripts down to the Salisbury Graduals of 1528 and 1532. These printed copies have the square and diamond notes instead of neumes, but, when the neumes are written upon lines and spaces, they are as easy to read as the other, the time being indefinite in both cases.

Sequences are usually in a sort of scanning prose, varying in length of lines, but sometimes hymns, which were written in Latin rhymes, were also used as sequences. Thus, the Evening Hymn :

" O Lux beata Trinitas
Et principalis Unitas,
Jam sol recedit igneus
Infunde lumen cordibus." (2 stanzas and a Gloria.)

This recalls to us the "Well could he counter *O Lux!* upon a pot," in Chaucer's *Canterbury Tales*, and is more probably alluded to than the :

" O Lux, beata Trinitas,
Tres unum, trium unio,
Imperialis unitas
In trium contubernio,"

which was sung on Trinity Sunday. These hymns, however, being choral, are usually found in Antiphonals rather than in Graduals.

There are twelve sequences with neumes on four lines and spaces in the

donans mox & ab ipsa donans puerica. **P**ueri
 deniq; precia decipit pandit alumpno moneta.
 eam inquit ad propria uolo pater hunc rescire
T paruum. **P**ater adhuc uerba tuo corde
 comota inquit scilicet. uolens mihi caro filium
 ostendit quid loqueris talia. **P**rope aduersus
 tibi inuis. **C**ontingant ego prope magna
 fido critica. **N**oli mater mi inque
 plorare. pater omnia xpi me liberabit gratia.
 veri uirtute angelica pergitur loquiqua intera.
Isaacem liberant. **I**usto puero presulando
 preparata ante scilicet. adest gloria.
 passus membris exlo dant animam.
 rubicunda. fulget inpurpura.
 et uoce supplicia.
 precatur xpi so familiar.
 eum esse leticia.
Quam comenda.
Laudes magna potius.

Cuius pater concepit melodia. Cuius innocenti
 colens tripudius. **Q**uod inquit xpi bodie uox
 ad alba. **H**os erudient frendens insania.
 erodiane frangi ob nulla crumma. **I**ngeb-
 lempius cuncta & p omnia. **A** bimatu
 sume uinea nalcandi tepora. **H**os erudite
 xpi uari ueris in te impia. **I**n frene
 moueritque arma superba decora.
 uere laci & ego regis cunctis corda.
Ne extinguat qui uicam prestat per sua uacula.
 um non ualent inuerti loquenti splendida nobilita
 quatenus potum. **I**ta ferret fraudes augere
 hendel sequi uerba dant pro argumina. **Q**uam
 uilem dux inquit aggreget ferro fuge in mem-
 bra uenera. **I**n ter ubera lac effundit de-
 qualinguis figent coagula. **N**ostri nunc

Winchester Volume, the last being imperfect. The other portions of the volume are noted only by indefinite neumes which are guides for accentuation of the words in recitation, in monotone, and in singsong chanting by indefinite intervals—more like speaking than singing, for which Saint Athanasius was famed. It is in these parts of the volume that we find the *Tropi in depositione Sancti Suuithini Episcopi*, followed by *Tropi Translationis Sancti Suuithini* (folios 46 to 47 vo.) and, towards to end of the book, *De Sancto Suuithino, Alleluia*, (fol. 182) and *Sequentia de Sancto Srvitheno, Alleluia*, followed by *De Sancto Athelwoldo* (fol. 189). From examples of this kind it is inferred that the volume belonged to Winchester Cathedral. Swithun was born about 800, and died in 862. Athelwold, "the Father of Monks," was Bishop of Winchester in 963, and died in 984. The diphthongs throughout the manuscript are marked by a sedilla under the "e," but they are not always marked when they should be.

The following are the words of the twelve sequences to which reference has been made, and of which a few facsimiles from reduced photographs are given. (Plates XX. XXI.) References to other copies in the Library of the British Museum, are here added, especially to two manuscripts which have the same kind of neumes upon lines and spaces—the Saint Alban's Book, 2 B IV. in the King's Library, and Caligula A. 14 in the Cotton. Collection. Eight of the twelve are found in the Sarum Gradual of 1532.

i. *De Sancto Stephano Martyre. Alleluia. [Sequentia.]*

Magnus Deus in universa terra, Magna sunt eius ubique omnia in cælo atque in terra opera, Qui est rex regum dominus omnium, a patre genitus ante sæcula, Cuius caritas vera cælo subleuat Stephanum de terra Atque perhenni vita ornat candida digniter corona. Plenus etenim Stephanus ueritate atque gratia Magna dabat prodigia, docens uerissima dogmata, Cum autem predicaret jam presentia Nostre redemptionis noua gaudia, Intento in superna, cæli patet ianua, Dixitque circumstanti plebi uoce publica, Sacra plenus gratia, Ecce dei uideo admirabilem gloriam Claritate fulgida Atque iesum stantem, in uirtutis dei, dextera. Cum hoc audisset impia gens iudaica, Dans fremitum, concita Quassat lapidibus Stephani membra, Sed stat fortiter patiens martir et orat Ne eis xp̄e noxam statuas, Sed jam accipe animam meam. Et cum hoc dixisset. in domino obdormiuit pace eterna Tu et nobis martir o Stephane sempiterna Inpetra gaudia. Amen.

[Bodl. MS. 775, f. 131b. Cott. Cal. A, xiv. f. 46. Sarum Gradual, 1532, f. 27.]

ii. *In Festo SS. Innocentum. Sequentia.*

Celsa pueri concrepent melodia, Eia innocentum colentes tripudia, Quos infans xp̄s hodie uexit ad astra. Hos trucidauit frendens insania Herodiane fraudis, ob nulla crimina, In bethleem ipsius cuncta et per confinia Ab imatu et infra, iuxta nascendi tempora. Herodes rex, xp̄i nati

uerens infelix imperia, Infremit totus, et erigit arma superba dextera. Querit lucis et cæli regem cum mente turbida, Ut extinguat qui uitam prestat per sua iacula, Dum non ualent intueri lucem splendidam nebuloſa quærentis pectora. Ira feruet, fraudes auget Herodes seuus, ut perdat piorum agmina. Castra militum dux iniquus aggregat, ferrum figit in membra tenera, Inter ubera lac effundit antequam sanguinis figerent coagula, Hostis naturæ natos euiserat atque iugulat [f. 133b] Ante prosternit quam etas paruula sumat robora Quam beata sunt innocentum ab erode cesa corpuscula Quam felices existant matres quæ talia fuderunt pignora O dulces innocentum acies o pia lactentum pro xpo certamina Paruorum trucidantur milia membris ex teneris manant lactis flumina Ciues angelici ueniunt in obuiam mira uictoria uitæ captat premia turba candidissima Te xpe petimus mente deuotissima Pŕa qui uenisti reformare sæcula innocentum gloria Perfrui nos concedas per eterna.

[Bodl. MS. 775, f. 133. Cott. Cal. A, xiv. f. 49. Sarum Gradual, 1532, f. 30.]

iii. *Incipiunt prosæ de natinitate Domini. Alleluia. [Sequentia die sexto.]*

Celica resonant clare camenas agminas, Nunc regis celebrando gratulanter nuptias. Lux noua iam terras illustrans, ueteres pellens tenebras, Reserat superna gratia diu clausa palatia. Felix mater! et sola intacta æterna puerpera, Cum nato stas grauida, cum uiri sis cubili nescia, Omnis caterua nostra te rogat, domina, Solus quo nostra cuncta peccaminum uincula, uirgo sempiternæ beata. Digna fuisti sola tollentem crimina Intra uteri claustra portare qui gubernans omnia supra infera. [f. 136b.] Hunc sua laudant facta. gaudentes bona qua uiunt super essentia Nos humillima tuba damus debita, poscentes eius clementiam, Vt nostra prestat tempora nunc quieta. Det placida frui uita, Vtilia donando famulis munera. Hac inter nos discrimina seuæ saluans Post funera derelicta Sedem ducat mortis ac malorum ignaram Qui ad dexteram patris almam sedens conregnat coæternus per omnia Potenter cuncta disponendo cum eo seda presentia et futura Beata iustis donat omnibus præmia Preclara qua lux uere micat. que est salus æterna et nostra gloria.

[Bodl. MS. 775, f. 136. Cott. Cal. A, xiv. f. 45, vo. Sarum Gradual, 1532, f. 34.]

iv. *Prosæ adsq. [ad sequentias?] de Sancto Iohanne Euuangelista. Alleluia.*

Laus armoniæ! resultet alleluia! Matre fecunda! domini gratia proles adest eximia. Euuangelista iohannes, diuina adnuntians preconia, Vel, ut aquila, figens lumina in alta, deitatis archana supergrediens omnia cordis oculo condita, Mente liquida contemplans illa excelsa uoce palam prolata, in principio cum patre erat uerbum per secula. Hic de adoranda deitate plurima, ipse atque [f. 138] de humanitate scripserat, omni mundo salubria. Ipse et defunctam excitauit uiduam, ipse et lapillos claritate gemmea compsit uirgas et aureas. Post tanta talia. per eum patrata, xpi magnalia, Nonagenaria nouena addita, transacta iam uita. Saluator, a summa descendens patria, dilectum ad regna uocat aurea. Et apostolica ad conuiuia in patria angelica. Nos iohannes adiuua, ut eadem sempiterna Consequamur gaudia!

[Bodl. MS. 775, f. 137b.]

Inſonſes culpa non eſt que noxioſ faciat
aliquoſ & moſtiſ ſubeant diſcrimina.

Expisti miranda semper & mister gratia.

P rose passis aeterna quibus est largior

premia. Ipsi laus sit nunc & infaccula.

Sec^a multiplicariae. Multua.

Nato carunt omnia domino piē agmina

Syllabam pncumata perfringendo or

domica *Et dies sacra in qua noua sus*

opus in octava

quarta mundo pieno d'acqua / al monte

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ulserunt & inmania nocto media, pat

toribus lamina. Dum fouente sua pecore

subito diua percipiunt monita: Iustus

Alma uirgine quippar ante sacula.

Sit immensa in celo gloria pax & incrementum

Inc. ergo ois catholica alacrisse iubila.

quanto canoro tremat alma poli machina.

Conter. & cor omnia hac indig. dona uoco

dam reddita humana concupere cuncta.

Seim namim muerre Confracca nanc

Allegretto molto
Allegretto molto

quibusque nobis etiam illis
sedem: nunc. Iocundus omnia. nunc per

(Musical notation for the first system)

exaltare o[mn]ia quinniamus o[mn]ia
em candida omnia. Iose sua pietate

quoniam omnia sunt in
quoniam omnia sunt in

SCQ CHORUS HERIBLANDO VERA.

The first system of musical notation, featuring a single staff with a treble clef and a key signature of one flat (B-flat). The notation includes a series of eighth and sixteenth notes, with some rests, indicating a melodic line. The system is part of a larger musical score.

Propitium domino ceteris
Veni cum de cetero mior idone.

(Musical notation continues)

ameniam chalda cum per totas antiph.

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v. [*Sequentia*,] *multiplariæ. Alleluia.*

Nato canunt omnia domino piæ agmina, Syllabatim pneumata perstringendo organica, Hæc dies sacrata in qua noua sunt gaudia mundo plene dedita, Hæc nocte præcelsa intonuit et gloria in voce angelica. Fulserunt et inmania, nocte media pastoribus lumina. Dum fouent sua pecora subito diua percipiunt monita. Natus alma uirgine qui extat ante sæcula, Est immensa in cælo gloria, pax et in terra. Hinc ergo cæli caterua altissime iubila Vt tanto canore tremat alta poli machina. Sonet et per omnia hæc in diæ gloria uoce clara reddita Humana concrepent cuncta deum natum in terra Confracta sunt et imperia hostis crudelissima Pax in terra reddita nunc letentur omnia nati per exordia Solus qui intuetur omnia Solus qui condidit omnia. Ipse sua pietate soluat omnia peccati regna.

[Bodl. MS. 775, f. 139b. Cott. Cal. A, xiv. f. 44. MSS. Reg. 2, B. iv. f. 68. Sarum Gradual, 1532, f. 22.]

vi. *Sequentia. Chorus in Epiphania. Alleluia.*

Epiphaniam domino canamus gloriosa, Qua prolem dei uere magi adorant. Immensam chaldei cuius persequere uenerantur potentiam, Quem cuncti prophete precinere uenturum gentes ad saluandas, Cuius maiestas ita est inclinata ut assumeret serui formam Ante secula qui deus et tempora homo factus est in maria. Balaam de quo uaticinans Exhibet ex iacob rutila inquit stella Et confringet ducum agmina Regionis moab maxima potentia. Huic magi munera deferunt preclara, aurum simul thus et myrram, T[h]ure deum predicant. Auro regem magnum, hominem mortalem myrra. In somnis hos monet angelus ne redeant ad regem commotum propter regna Pauebat etenim nimium regem natum uerens amittere regni iura. Magi stella sibi micante preuia Pergunt alacres itinera patriam Qua eos ducebat ad propria linquentes herodis mandata Qui percussus corde nimia preira Extemplo mandat eludia maica Non linquens aliter impunitas sed mox priuari eos uita Omnis nunc caterna tinnulum iungat laudibus organi pneuma. Mystice offerens regi regum xpo munera pretiosa Poscens ut per orbem regna omnia protegat in secula sempiterna.

[Bodl. MS. 775, f. 140. Cott. Cal. A, xiv. 49, v. Sarum Gradaal, 1532, f. 40.]

vii. *Sequentia de Resurrectione, in die sancto Paschæ. Fulgens preclara. Alleluia.*

Fulgens preclara rutilat per orbem hodie dies in qua xpisti lucida narrantur ouanter prelia. De hoste superbo quem iesus triumphauit pulchre castra illius perimens teterrima. Infelix culpa eue qua caruimus omnes uita, Felix proles Mariæ qua epulamur modo una. [f. 142b.] Benedicta sit celsa regina illa, Generans regem spoliante tartara, Pollentem iam in æthera. Rex in eternum suscipe benignus preconia nostra Sedule tibi canentia, Patris sedens ad dexteram, Victor ubique, morte superata atque triumphata, Polorum possidens gaudia. O magna O celsa O pulchra clementia xpisti luciflua o alma Laus tibi Honorque Ac uirtus qui nostram antiquam leuiasti sarcinam Roseo cruore agni benignissimi empta florida micat hæc aula Potenti uirtute nostra qui lauit facinora tribuant dona fulgida. Stupens ualde in memet iam miror hodierna Tanta indignis pandere modo sacramenta [f. 143] Stirpe dauitica, Ortus de tribu iuda, leo potens surrexisti in gloria Agnus uisus es in terra, Fundens olim arua, Regna petens supera iustis reddens premia in secula Dignanter ouantia. Dic, impie zabule, quid ualet nunc fraus tua Igneis nexus loris a xpisti

uictoria? Tribus lingue admiramini quis audivit talia miracula Vt mors mortem sic superaret rei perciperent talem gratiam. Iudea incredula, cur manes adhuc inuerecunda? Perspice xpistocolas qualiter leti scandunt inclita Redemptori carmina Ergo pie rex xpe nobis dans peccamina Solue nexorum uincula Electorum agmina. Fac tecum resurgere ad beatam gloriam Digna rependens merita Paracliti sancti consolationem piam. Expectamus sanctam^a re promissionem tuam Per acta ascensionis sancta solennia Qua es regressus in cælum nube tectus clara Pollens laude æterna.

[Bodl. MS. 775, f. 142. Cott. Cal. xiv. f. 53. MS. Reg. 2, B. iv. f. 73 vo. Sarum Gradual, 1532, f. 122.]

viii. *Sequentia. FERIA III. post Pascha.*

Pro me casta conc[e]o carmina, organa subnectens ypodorica,^b Regi claustra deo tartarea rumpenti, decanta nunc symphoniam, Morte qui uicta resurgens gaudia mundo gestat colenda Ac insolita morantes perdita cociti confinia. Aspectant lumina intrante illo luce beata Terrore perculsa tremescit demonum plebs ualida. Dant suspiria, Fletuum alta Repagula qui sic audax fregerit mirantur tunc fortia Sic ad supera Redit cum turba Gloriosa ac timida refouet discipulorum corda. Precelsa huius trophea admirantes flagitemus nunc uoce decliua Virginum inter agmina mereamur pretiosa colere ut pascha, Galilea inquæ sacrata prefulgide contueri lucis exordia.

[Bodl. MS. 775, f. 143 vo. Cott. Cal. A, xiv. f. 54 vo. MS. Reg. 2, B. iv. f. 78 vo. Sarum Gradual, f. 126 vo.]

ix. *Prosa adsequentia Cithara, de Ascensione Domini. Alleluia.*

Rex omnipotens, die hodierna, Mundo triumphali redempto potentia, Victor ascendit cælos unde descenderat Nam quadraginta postquam surrexerat Diebus sacris confirmans pectore Apostoloru[m] pacis clara reliquens oscula Quibus et dedit potestatem laxandi crimina, Et misit eos in mundum baptizare cunctas animas, In patris et filii et sancti spiritus elementia Et conuescens precepit eis ab ierosolomis Ne abirent sed expectarent promissa munera. [f. 145b.] Non post multos enim dies mittam uobis spiritum paraclitum in terra Et eritis mihi testes in ierusalem iudea siue samaria. Et, cum hoc dixisset, uidentibus illis elevatus est, et nubes clara Suscepit eum ab eorum oculis intuentibus illis æra. Ecce steterè amicti duo uiri in ueste clara Juxta, dicentes quid admiramini cælorum alta? Jesus enim, hic qui assumptus est a uobis ad patris dextera[m] Vt ascendit ita ueniet querens talenti commissi lucra, O deus maris poli arcei. hominem quem creasti fraude subdola Hostis expulit paradiso et captiuatum secum traxit ad tartara. Sanguine proprio quem redemisti deo [f. 146] Illuc et rediens unde prius corruit paradisi gaudia, Iudex, cum ueneris iudicare secula, Da nobis petimus sempiterna gaudia in sanctorum patria In qua tibi cantemus omnes alleluia.

[Bodl. MS. 775, f. 145. Cott. Cal. A, xiv. f. 61. MS. Reg. 2, B. iv. f. 97 vo. Sarum Gradual, f. 143 vo.]

^a Secundum.

^b The Hypodorian organ was a small instrument used only for ecclesiastical chanting. It had no sharp or flat key in its three octaves except for B flat.

x. In pretiosa sollempnitate Pentecosten. Alleluia.^a

Benedicta sit beata trinitas deitas aeterna pariter coequalis gloria. Deus genitor natus genitus cum sacro pneumate permanens super omne quod extat Quibus est una semper uoluntas et a se discrepat haud umquam triplicata persona Nam constat deitas una non in tres deos diuisa quam fides fatetur a xpo orthodoxe dedita [f. 146b] Hæc namque pellit delicta patriam cedit serenam quam dulcem iubilant agmina simphoniam celica Altithroni uestigia imitantur stolis candidata Operiuntur que binas quas captant post seclī discrimina Et nos quos illustrat gratia dei supera demus nostra debita Quatinus caterua celica nobis maneat post funera socia Vltimaque peracta discrimina possimus alta perfrui mox palatia Quo perspicula flagrat lux accensa constanti flamma que est deus uisio nostra et salus aeterna Angelorum que illustrat fortiter pectora Vt in xpo solo sua defigant lumina [f. 147] Hæc namque est illa sitis flagrans qua tunc sitiunt anime sanctorum uel corpora Dum fuerint datā perpetua nobis pro eis a iudice premia.

[Bodl. MS. 775, f. 146. Cott. Cal. A. xiv. f. 66. MS. Reg. 2, B. iv. f. 206. Sarum Gradual, f. 137.]

xi. In hac laude Deum meum adorabo. Alleluia.

Salue mater xpisti o inclita! Porta celi, decus orbis, et uirginum gemma pulchra! Atque domina angelorum, et aurea clara scala, Perquam fideles superna leti scandunt gaudia. Que sola extas post xpm spes nostra sanctissima. Te agmina celi semper dominam benedicant. Te uox omnis pulchra iam glorificet per Aurea celi pandat et astra. Nobis corusca. Amen. Fiat.

[Bodl. MS. 775, f. 178.]

The twelfth Sequence is imperfect, but commences—

Concentu parili hic te Maria veneratur populus teque piis colit cordibus.

This is in small writing, with the music on four red lines.

The antiquity of Salisbury Use, and the sources from which it was derived, might be much further elucidated if any especial search were made. The library of the British Museum includes a Salisbury Missal printed in folio on vellum in Paris in 1527 (Reference Case 41, K.) An Antiphonarium in 2 vols. 1519-20, and a Graduale in 1532 (both in Case 35, b.) The Cambridge Public Library contains an edition of the last-named, published in 1528, and there are variations between **that** and the edition of 1532 which should be noted. For instance, I was induced to search for a Kyrie by Saint Dunstan through reading the Chronicle of John of Brompton, Abbot of Jorevall in Richmond, Yorkshire. It is

^a In the Salisbury Gradual the above was to be sung on Trinity Sunday, instead of on Whitsunday as here directed.

alluded to in the following passage: "Beatus eciam Dunstanus semel soporatus, audivit spiritus angelicos cum suavi nota *Kyriel*, *Kyriel* psallentes; cujus modulos armonice adhuc continet Tropus ille apud Anglos famosus, *Kyrie rex splendens*, qui in Sanctorum cantare majoribus solet festis." (Twysden's *Decem Scriptores*, pp. 878-9.) This Kyrie was only to be found without the words in the Sarum Gradual of 1532, and I am indebted to Henry Bradshaw, Esquire, Librarian of the University of Cambridge, for pointing out to me a complete copy in the Sarum Gradual of 1528, and for transcribing it. The omission in 1532 seems to have been a lapse, because it is there referred to in the following rubric. Under "Pro defunctis" fol. lv. towards the end of the volume, after directions for the use of other Kyries, it says: "In festo Sancti Michaelis, in mense Septembris dicitur 'Kyrie rex splendens' cum versibus: et in festibus Sancti Dunstani et Sancti Michaelis in monte tumba (Saint Michael of the Mount, in Cornwall) dicatur cantus de 'Kyrie rex splendens' absque versibus."

As this Kyrie of Saint Dunstan's dream has not before been identified, and takes but a page in print, while the Gradual of 1528 is of extreme rarity, owing to the heavy penalty inflicted upon the possessor of a copy in the reign of Henry VIII., it has been thought to be a curiosity worthy of reproduction, and is therefore subjoined.

A KYRIE ELEYSON by Saint Dunstan.

In festo sancti Michaelis in mense Septembris (29th Sept.) dicitur KYRIE, REX SPLENDENS cum versibus:—

Ky - ri - e Rex splen-dens ce - li ar - ce sal - ve ju - gi - ter et cle - mens ple - bi tu - e sem - per e - le - y - son.

Im - ni - di - ce quem tur - me che - ru - bin lau - de per - hen - ni - ter pro - cla - mant in - ces - san - ter no - bis e - le - y - son.

* In - si - gni - ter ca - ter - ve pre - cel - se et qui - bus se - ra - phin re - spon - den - te lau - dan - tes no - stri e - le - y - son.
[Tu si - gni - fer]

Chri - ste rex al - ti - thro - ne or - di - nes an - ge - lo - rum nomen quem laudant in - ces - san - ter pul - cre di - gna - re ser - uis tu - is sem - per e - le - y - son.

Chri - ste quem to - to or - be u - ni - ca ec - cle - si - a y - mni - zat sol et lu - na a - stra tel - lus ma - re cu - i et fa - mu - lan - tur sem - per e - le - y - son.

I - psi i - dem in - cli - te pa - tri - e per - pe - tu - e he - re - des san - cti o - mnes di - gno car - mi - ne pro - clamant quam o - van - ter no - bis e - le - y - son.

Vir - gi - nis pi - e ma - ri - e o al - ma pro - les rex re - gum be - ne - di - cte re - dem - ptor cru - o - re mer - ca - tis

pro - pri - o mor - tis ex po - te - sta - te sem - per e - le - y - son. In - si - gnis - si - me in - ge - ni - te o ge - ni - te

o - ri - gi - ne jam - ex - pers et fi - de mor - tu - e ex - cel - lens o - mni - a ca - ter - ve hu - ic tu - e

cle - mens e - le - y - son. Lim - pi - dis - si - me glo - ri - e sol ju - sti - ti - e ar - bi - ter o - mnes gen - tes

di - stri - cte dum ju - di - ces tur - me ob - ni - xe pre - ca - mur tunc a - stan - ti cle - mens e - le - y - son.

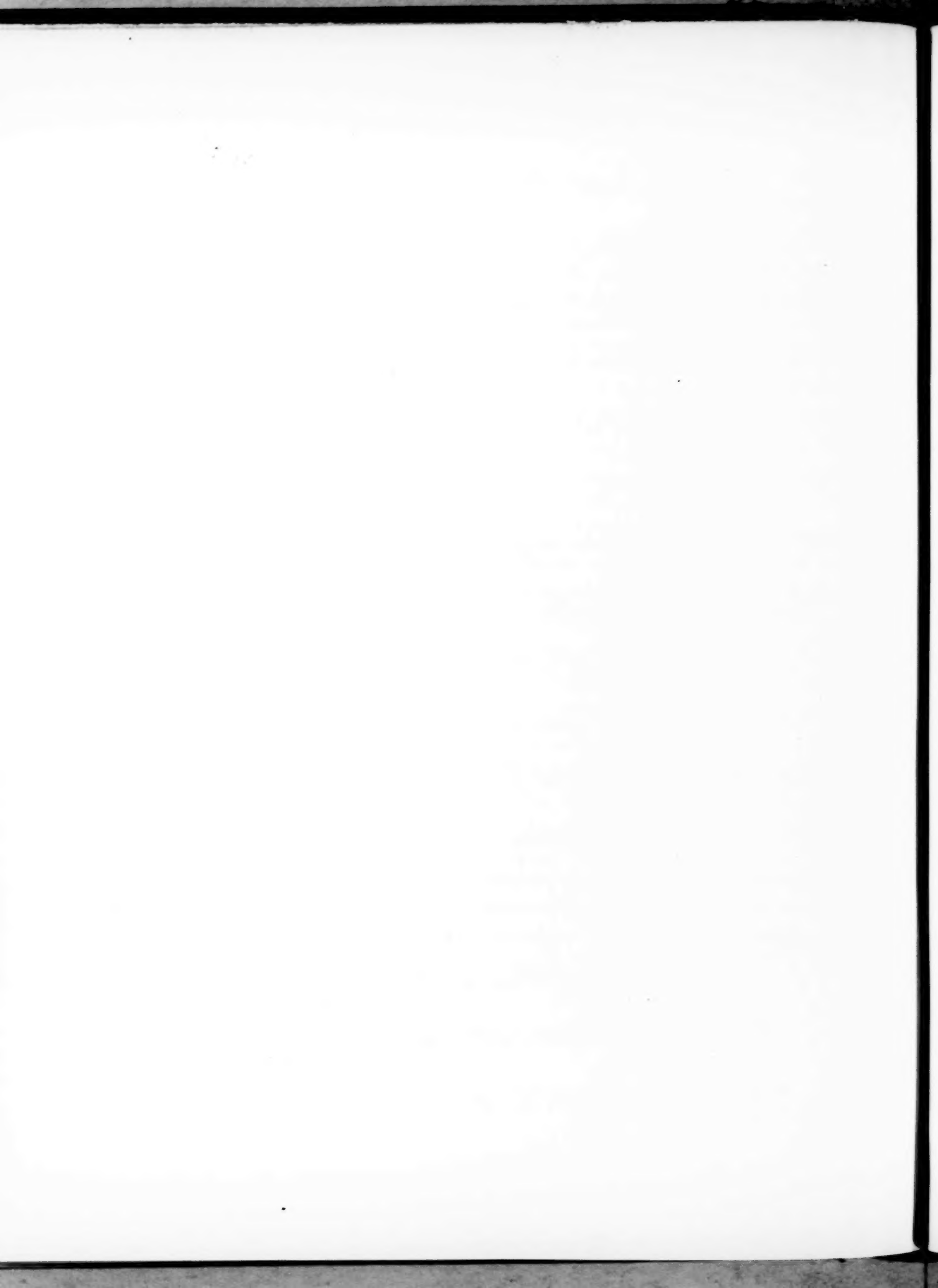
* "Insigniter," in the text, seems to be a mistake in copying from manuscript "Tu signifer."

In festis sancti Dunstani (19th May) et sancti Michaelis in monte tumba (16th Oct.) dicatur cantus de KYRIE REX SPLENDENS absque versibus:—

Ky - ri - e Rex splendens ley - - son. iii.

Chri - ste ley - - son. iii.

Ky - ri - e ley - - son. iii.



XX.—*On Traces of the Primitive Village Community in English Municipal Institutions.* By GEORGE LAURENCE GOMME, Esq., in a Letter to WILLIAM J. THOMS, Esq., F.S.A.

Read June 27th, 1878.

MY DEAR SIR,

I fear I must begin my communication to you, on the subject of an early phase in the history of English municipal institutions, with an apology; and an apology withal that has reference rather to my mode of treating the subject than to the subject itself. It is in this wise. The facts to which I beg leave to draw your attention cannot so well be considered new to the antiquary, as can the view I have taken of their value and relationship to each other. The result is, therefore, that the following pages may be thought a little more argumentative than they should in strictness be for an antiquarian subject. But this defect, if defect it be, will, I trust, be compensated by the value of the general subject I have ventured to treat upon, and by the fresh light which I may perhaps have thrown upon a class of English institutions, not the least important of those which uphold our great national fabric.

In introducing for historical inquiry a subject which bears very closely upon the origin of the municipal institutions of England, there are several unfortunate associations which at once come before the mind. I say unfortunate, because their existence seems to me to have hitherto impeded a thorough penetration into the early history of English municipal towns, and indeed to suggest, if not to assert, that there is no such early history at all, nothing prior to the assumption of municipal rights and privileges. These associations may be thus grouped: the idea that everything municipal has been derived from Rome;^a that the

^a Pearson's *Early and Middle Ages of England*, i. 264; Thomas Wright in *Archæologia*, vol. XXXII 298; Coote's *Romans of Britain*, 359-382.

charter granted by the king, or other lord, is the commencing point of the known history of English municipal towns;^a that municipal history occupies a position quite apart from and independent of all other local institutions.

It appears to me, however, not only that the early history of English municipalities is still traceable, but that it forms a very important portion of our national history; a portion, I would observe, which philosophical historians have long asserted is to be found, but which English history has stubbornly refused to acknowledge, except in general terms and in some few isolated instances. The whole subject of municipal government in England is unquestionably a difficult one to handle; but the method hitherto adopted for its elucidation has greatly contributed to this difficulty. The general question has been discussed over and over again as to the origin of the municipal institutions of England; but the far more important inquiry, because it is logically the first, as to what are the municipal institutions now actually existing, and what has been their historical development from a previous state of things, has either not been undertaken at all, or has not been applied to the solution of the general subject.

This position of affairs is, I think, attributable to a great extent to the easy solution which the theory of a Roman origin supplies. It is known from abundant sources that the early Teutons hated city life and loved the country. It is known that their settlements in any country, won by the sword or appropriated by colonisation, were based upon their own organization into agricultural communities. It may be inferred on tolerably sure grounds that this basis of settlement brought about a fairly equable arrangement of social units; that is to say, it was no part of the Teutonic policy to set aside any special body of settlers as superior to other bodies, to allow one village community to lord it over another. But this general proposition is at once seen to be altered with respect to the conquest of Britain. The ground of Romano-Celtic Britain was uneven ground, and inequalities in the social structure soon began to make themselves apparent, partly of course from the natural causes arising from the development of English history, but partly also from extra-English causes. Thus, passing from primitive to historical times, we are met with the significant fact that English history, in spite of its supposed Teutonic origin and tendency, has developed city life and town life at the expense of country life, just as Roman

^a Hallam, *Europe during the Middle Ages*, p. 571, n. (Murray), says that he is unable to discover any trace of internal self-government before the granting of charters. Robertson, *Charles V.* vol. i. p. 316 says that corporations were introduced from France after the Conquest.

history did. The early mark court is now only faintly represented by the fast decreasing powers of the manor and the parish vestry; the hundred courts are practically extinct; the shire courts scarcely live in the modern county administration, for this has nothing like the progressive importance which nine hundred years of history should have given it; while cities, at no time a portion of Teutonic life, have grown up as the embodiment of local power and local self-government. All this would seem, therefore, to imply that the history of English municipalities carries us far beyond the early history of Teutonic institution, carries us, therefore, either into the theory of a Roman origin or of an Anglo-Norman creation.

There is, however, one more alternative which this general view of the case would involve; that is, an Anglo-Saxon occupation of a Roman city. It is necessary to consider this theory for a moment, for, if it could be upheld from the same standpoint as the two former, the burden of proving the non-development of English municipal institutions from Roman municipal institutions would fall very heavily upon the inquirer into early Teutonic history. But the weight of proof against this theory is overwhelming. Of the existing municipalities of England, only a comparatively few occupy the same sites as the Roman *municipia* or *coloniae* mentioned by Ptolemy and Nennius, or even as the stations mentioned in the Antonine Itinerary, the Notitia, and by the Ravenna geographer; but, though London, York, Lincoln, Leicester, Canterbury, and Winchester have a continuous historical existence in these authorities, they wisely do not venture (to use the words of Professor Stubbs^a), like some of the towns of southern France, to claim an unbroken succession from the Roman municipality. Though Verulamium, Caistor, Dunium, and Eboracum find a place throughout these early historians, St. Albans, Norwich, Dorchester, and Lichfield have reared themselves alongside those old Roman sites, without, so far as history teaches us, deriving any advantage from Roman institutions.^b Again, Wroxeter, Cirencester,^c Silchester, though mentioned by the same authorities, disappear as boroughs at and since the time of Domesday; while Ludlow, Marlborough, Doncaster, Carlisle, and Farnham, all mentioned either in Ptolemy or the Antonine Itinerary, were not municipal boroughs until long after Domesday.^d Such are a few examples

^a *Const. Hist.* i. 62.

^b *Vide* Thompson's *Eng. Mun. Hist.* pp. 91, 110.

^c Cirencester is mentioned as a borough in 1399, but disappears again after that time.

^d The dates are as follows: Ludlow 1300, Marlborough 1200, Doncaster 1194, Carlisle, Henry III., Farnham 1310. See Tables affixed to Merewether and Stephens's *Hist. of Mun. Corp.* vol. iii.

of the broken line of progress which towns, known to have had a Roman organization, either as *municipia* or *coloniae*, have made in England. The causes thereof, however difficult to trace and gather together into a historical narrative, can at once be stated not to belong to the Roman influence by which the towns were created,—that would, on the contrary, have produced a uniform progress, a strongly marked topographical identity of each town in Roman and mediæval times, and, accompanying these, a continuous chronicle of events.

But, without stopping longer on the present occasion to inquire into the position which the history of municipal institutions at present occupies in the field of historical research, I would observe that it appears almost certain that no direct historical facts prevent us from tracing back existing institutions to a primitive stage of society—a stage, therefore, not belonging to civilized Rome. We thus clear the ground at the end of our journey, and must now turn to the commencing points.

With this preliminary statement, let me at once proceed to state the nature of the particular branch of evidence which is now to be brought forward, and the manner in which it can be applied to the facts already before us. My case, then, stated shortly, is this: that from amidst the common inheritance of English municipal towns we can gather sufficient evidence to trace their history to when they were little more than village communities. We must, however, neither lose the full significance of this important fact, nor must we make it engulf other equally important facts. We must not say, because English towns have during a long history retained some very early institutions, which, in the light of modern research, we can call primitive, that therefore English municipal institutions are wholly Teutonic in their origin and growth; we must not refuse to recognise what of them belongs to the influence of Rome: in point of fact, we must not refuse to recognise that it is possible, and indeed very probable, that Teutonic institutions became so encrusted with Roman institutions, that, unless we study very carefully and very thoroughly, it is almost impossible to penetrate through the latter to the former. With these reservations, then—with the period of the village commune directing us to primitive times, and hence to Teutonic history—with the almost sudden growth of large towns under the protection of the sovereign, directing us to Roman history—we proceed with the subject now immediately in hand.

Now besides some well-known features of English municipal institutions which may be considered as the common property of all municipal towns as distinguished from other towns, there is one important institution which, from

the fact of its not being exclusively municipal, enables us to extend our boundaries of research; I mean the right of English municipal bodies to certain possessory claims upon lands within their jurisdiction. I cannot, however, say that this right has come down to modern times so completely and so universally as other municipal institutions. It has almost entirely lost its original form in many municipalities; it lingers in a broken form in others; it lives in tolerable completeness only in a few. But that we are able so to classify its modern appearance as to suggest the stages of its development is a favourable conception of its once universal aspect. In the present paper I wish to confine our attention to this one subject, not because it is the only municipal institution by which we may trace evidences of the primitive village community,^a but partly because it has not yet attracted the critical attention of English historians, and partly because it is really the most significant factor in the evidence to be brought forward. I do not, therefore, mean to say that it is possible from this source of information to put one's finger upon a perfect, or very nearly perfect, example of a primitive village community as it is pictured in the pages of comparative jurisprudence. But what I contend is, that, by arranging in archæological groups some important facts of English municipal history—by taking these facts from their present hard-bound geographical unities and placing them in one historical unity—we shall be able to see their significant historical relationship to each other, we shall be able to carve out a historical development instead of simply an unmeaning chronological progress, and we shall be able at once to place them in their archaic epoch of history. Even if we could only construct from many isolated parts of English municipalities the living features of the most essential portions of a single primitive village community, I should hold such evidence to be important. But here the right to bind these many isolations together and call them a unity would rest upon argumentative, not historical, grounds, and would, therefore, be so far fallible. Fortunately, however, the growth of English municipal institutions has not been uniform, those of one town overlap those of another, and we thereby gain an almost unbroken chain wherewith to bind our parts together.

It is a sufficiently significant fact that all the municipal corporations of England are either actually in possession of landed property or have records

^a I may mention one other institution which connects the English municipalities with primitive institutions, namely, the *open-air court* or assembly. I am treating of this subject in a separate work, *Primitive Folkmoets*, but I would note that open-air assemblies are to be found in High Wycombe, Lostwithiel, Bishop's Castle, Hastings, Lichfield, Southampton, Seaford, Dover, Folkestone, and London.

referring back to the time when such was the case; and, in most instances, they give us the official statement of a sale or other mode of parting with their lands.^a Now this, of itself, does not lead the subject beyond the Roman boundary. The *municipia* and *coloniae* of Rome also possessed certain lands which they called their *regio* or *territorium*. But, though the parallel between English and Roman is here complete enough,^b one step further on will reveal to us the historical difference. The Roman *municipium* is a *corpus* or corporation, and holds its lands in right of its legal position;^c moreover it is called into existence by the sovereign, by a *senatus-consultum*, by a *lex*, or by an imperial constitution.^d This creation of a legal corporation by the Roman law is the undoubted source of the same conception in England.^e The ecclesiastical authorities acted under it from early times, and were enabled to accumulate their vast possessions of landed property by means of one of its fundamental principles, perpetual succession. But when we turn to municipal bodies we find the case somewhat different. Though every king, from the Conqueror downwards, granted charters to several towns,^f it is not until the reign of Henry VI. that the first charter of municipal incorporation is granted for the purpose of *giving the burgesses the power of taking and inheriting lands by succession, and of suing and being sued by their corporate names*.^g The simple fact of being possessed of landed property, therefore, either carries us no further than so late a period as Henry VI. or compels us to adopt the idea of a descent from Roman times. We know by ample evidence that many towns owned their surrounding territory long before the Lancastrian period, and the only question is, therefore, Whence did this power originate? To answer this, in the first place, it must be observed that the proprietary rights of

^a The amount of corporation property sold during 1877 was £173,895. This illustrates how quickly the old state of things is now passing away. See *Abstract of Mun. Borough Accounts* (Commons' Papers, 1878, No. 196).

^b Coote's *Romans of Britain*, p. 361.

^c *Ibid.* 358.

^d Ortolan, *Hist. of Roman Law* (Eng. Trans.), p. 606.

^e Blackstone's *Commentaries*, by Stephen, book iv. pt. iii. cap. i.

^f The number of charters granted before the reign of Henry IV. amounts to 606. See a Tabular Statement in *Journal of Statistical Society*, vol. v. p. 101.

^g Merewether and Stephens's *History of Boroughs and Municipal Corporations*, vol. i. p. v. The charters granted prior to the reign of Henry VI. simply grant certain privileges. London was freed by Henry I. from the immediate jurisdiction of any tribunal except of their own appointment, from several universal imposts, from the obligation to accept trial by battle, from liability to *misericordia* or entire forfeiture, and from tolls and local customs. (Stubbs's *Select Charters*, p. 103.) In the reign of Henry II. York, Bedford, Shrewsbury, Bridgnorth, Andover, Preston, and Cambridge pay certain sums for charters of liberties. (*Ibid.* p. 157.)

English municipalities cannot be defined so nicely as to mean simple ownership. The greater number of instances, it is true, can admit of only this latter interpretation; but we meet with so many examples illustrating how the old communal rights have developed into the modern form of actual possession by private owners, that there is little difficulty in placing the former as the archaic parent of the latter. At Kilgerran, for instance, and at St. Clear's, the right of pasture in the burgesses over the uninclosed lands of the two boroughs was gradually transformed into a right of ownership transferred by means of a formal presentment at the courts leet.^a At Norwich the freemen receive annually one shilling each for the rent of the town close estate, which was formerly a common. (*Mun. Corp. Com.* iv. 2466.) What we have to deal with, therefore, at present, and without at all losing sight of the fact of actual ownership, are the proprietary rights of the municipal towns which have lived on in spite of the change of their legal status, and which present to the modern historian just as good examples of a crystallisation of institutions as are met with in Hindoo history.

The agricultural features, if I may say so, of the primitive village community may be thus broadly arranged: first, the inclosed habitations of the people, afterwards known as the village or *tūn*, town. This represents the centre point from which issued all the rights over the adjacent territory and in the community; each of the villagers has there his homestead, his house, courtyard, farm buildings (Stubbs, *Const. Hist.* i. 49), and, according to Nasse, as much land as was requisite to form a garden, kitchen garden, and for flax and other culture which required a constant protection. (Nasse, *Agric. Commun.* p. 17.) All this formed an inclosed spot sacred against all comers, the home which came to be popularly called an Englishman's castle, the first step in the history of real property law. Then come the common lands, over which the villagers have only cultivating rights, according to rules determined upon at the common assembly of the people. Round the village are the inclosed grass-lands for the rearing of calves, &c.; round this the arable land for three crops; then the meadow ground for hay

^a *Reports of the Municipal Corporation Commissioners*, vol. i. pp. 280, 378. Also the "urbana prata" and "burgwara maedum" of Canterbury are mentioned in the *Codex Diplomaticus* (ii. pp. 26 and 66), and the common wood (i. p. 216; ii. p. 1); Rochester had "communione marisci quae ad illam villam cum recto pertinebat" (ii. p. 57), also "caestrwarowald" (i. p. 115); Grantabryc and Colchester had "communem pasturam" (Ellis's *Int. to Domes.*); see Coote's *Romans of Britain*, p. 361, note 3; but in these boroughs there is no trace of any of these communal rights now, though there is of actual ownership.

harvest; then the stinted pasture lands; and finally the wooded pasture, in primitive times the forest or mark boundaries of the whole community.^a

Now evidence of the existence of this village commune in England is, as is well known, abundantly forthcoming,^b and Sir Henry Maine, who has touched upon the subject in his celebrated work on *Village Communities of the East and West*, very forcibly suggests some new sources from which to gain information. The peculiar customs of the Scotch borough of Lauder suggest to him the advisability of a re-examination of Scottish agricultural history. But to my mind they suggest much more. They suggest that similar customs might be found to exist in English boroughs, and that, therefore, a new chapter of English municipal history has yet to be written. I do not now attempt to write this new chapter; my object is to suggest some of its probable headings.

As stated above, I shall not attempt to deal with the complete organisation of the old village community; it is not to be expected that the old primitive forms have lasted throughout the warfare of a thousand years without decaying here and developing there. Of the purely village life, for instance, there remains very little evidence; and this little has to be sought for, not from means readily at hand, but from the court books and custumals of the old town-moots and from the immense range of literature occupied by the history of real property law. Here in the village itself commenced the decay of the old village system—here land first became private property. I hope at some future time to be able to treat of this subject, but for the present we must pause no longer here. We have to travel away from the centre point, whence issued all the cultivating rights of each free villager over the lands of the community, in order to consider what is left of these rights themselves.

Our first group of evidence relates to arable fields and meadow ground, which were divided in primitive times by lot among the villagers.^c At Nottingham the burgesses are entitled, if resident, to take, in order of seniority, what is called a "burgess part," that is, an allotment of land in the fields or meadows at a small ground-rent payable to the corporation. These "burgess parts," we read, are 254 in number, and are unequal in value, forming in fact a sort of lottery.^d At Malmesbury the whole body of commoners are interested in a portion of land

^a See Nasse, p. 17, and *Essay on the Land Tenure of Germany*, by R. B. D. Morier: *Cobden Club Essays*, first series.

^b See the facts summarised by Nasse in his *Agricultural Community*, pp. 1-13.

^c Laveleye's *Primitive Property*, *passim*.

^d *Mun. Corp. Commission Reports*, iii. 1993.

divided into 280 allotments of about an acre each, forty-eight landholders have an acre each, and the twenty-four assistant burgesses have an additional acre each.^a At Berwick-on-Tweed there is one portion of land demised to tenants by the mayor, bailiffs, and burgesses, called "treasurer's farms," and another portion is subdivided into several parcels varying in quantities from $1\frac{1}{4}$ to $2\frac{1}{2}$ acres. These latter are called meadows, and, at an annual meeting of the burgesses called the "meadow guild," are distributed as they become vacant by the death or non-residence of the last occupiers among the senior resident burgesses and widows of burgesses, the most ancient burgesses being entitled to choose the most valuable vacant meadow, and so on down to the youngest, until the number of vacant meadows is exhausted.^b At Laugharne the principal part of the corporation lands, amounting to about 330 acres, and lying together near the town, is divided into seventy-six shares, namely, twenty shares at Haydon, sixteen at Moore, forty at Undercliff. These plots are under corn for three years, and for three years following in grass, and they are exclusively enjoyed by the burgesses. At the death of a senior burgess the profits of his share are taken by his personal representatives until the next Michaelmas court, when, at that court, the next senior resident burgess is presented by the jury, and succeeds to the vacant share.^c At Aberavon there are 99 customary acres of inclosed land belonging to the borough, which, by an old ordinance, are divided amongst the thirty-three oldest burgesses, three acres being allotted to each, which they hold for their lives, and at their deaths the allotment goes to their widows during widowhood. If there be no widow the oldest burgess who has previously had no allotment becomes entitled to the allotment so falling in.^d A portion of the property of the corporation of Marlborough consists of about 84 acres of land called the "port field," and, by a very ancient usage, each of the burgesses has a portion, varying from six to two acres, of this land for life upon paying a small fine.^e The principal property of the corporation of Arundel is an estate of about 90 acres, called the "Burgesses' Brooks," which is divided into sixteen unequal portions, and let from year to year to a burgess upon first coming into the corporation.^f The revenue of the corporation of Chippenham consists chiefly of the rent of about 34 acres of land which they have of their own property; and other

^a *Mun. Corp. Commission Reports*, i. 77-8.

^b *Ibid.* iii. 1443.

^c *Ibid.* i. 287-9.

^d *Ibid.* i. 166.

^e *Ibid.* i. 85. The Portfield of Haverfordwest is still a commonable meadow, i. 241.

^f *Ibid.* ii. 674. See also Tierney's *Hist. of Arundel*, pp. 705-8.

borough land, called "West Mead," is laid down in meadow, and the grass divided annually among the bailiff and burgesses and the ninety-seven first freemen on the anciatry. The extent of the West Mead is now about $37\frac{1}{2}$ acres. An acre is first set out for the bailiff and twelve burgesses, and the remainder is divided into quarter-acres, called "farthingdoles," and each of the ninety-seven freemen is intitled to one. None are allowed to enter the mead until the bailiff has cut his acre; but after the bailiff has carried away any one is at liberty to cut his farthingdole when it suits himself, and application is made to the sub-bailiff, who, if necessary, treads down a path to the specified farthingdole. The free-men are said to be much attached to this mode of occupying their property.^a At Kenfig the burgesses are entitled each to a twenty-ninth share of an inclosure called "Wayn Kimea." Upon the death of a burgess holding one of the plots, his eldest or other son, if a burgess and resident, succeeds to the enjoyment, and in default of this the eldest resident burgess, not in the enjoyment of one of the plots, becomes entitled to the plot so vacated for his life.^b At Clun, in Salop, we meet with some very peculiar information. The burgesses claim to have formerly had the exclusive ownership and enjoyment of certain undivided lands lying in nine fields in different parts of the manor and forest of Clun, containing upwards of 1,500 acres arable and 200 forest. The freeholders at large now claim and in point of fact exercise the right of pasture over these lands, and at a trial disputing this right in 1690 some minutes were produced by the bailiff of the corporation, the first of which is as follows: "I measured out our burgesses' undivided lands, and plowed ye same, and are two miles in length from Cumy-frodd to Ronderengereth, being in all nine fields, one year after another."^c

Such is the kind of evidence of the first portion of the cultivating rights of the old village commune, namely, allotments of arable and meadow lands. It is not of course complete evidence; but it is sufficiently so to establish that at one time or other it was complete. The mode of allotment is no longer identical with that described by Mr. Benjamin Williams in an Oxfordshire manor,^d with the Sussex tenantry customs described by Mr. William Figg,^e or with the customs of the Suwáti Afghans described by Major Raverty,^f and those of Tanjore by Mr. Stokes;^g

^a *Mun. Corp. Commission Reports*, ii. 1248.

^b *Ibid.* i. 269-70.

^c *Ibid.* iv. 2644. If the last clause "one year after another" in any way alludes to one field being ploughed at a time while the others were open, this passage is peculiarly significant.

^d *Archæologia*, vol. XXXIII. 269.

^e *Sussex Archæological Collections*, iv. 305-308.

^f *Bengal As. Soc. Journal*, No. iii. 1862.

^g *Indian Antiquary*, iv. p. 65.

it is in fact no longer the primitive Aryan custom, namely, a lottery by means of sticks or pieces of straw of different lengths, but it has grown into an essentially English custom. Again, the time for making the allotments is no longer once a year or at any fixed period. But, instead of this, we have very good substitutes. The allotment by age, it will be observed, is strangely identical in almost every instance, and the ealdors were always revered among Teutons and among primitive peoples generally. Again, the right to the allotment being for life, instead of annually, is only a step consistent with the whole of English property law history.^a It leads by insensible stages to what we meet with at Newcastle-on-Tyne and at Lancaster, the peculiarities of whose customs are clearly attributable to archaic history. In both these towns certain lands are held by a lease and custom of a remarkable kind. The parcels in Lancaster are very numerous, probably nearly two hundred; and in Newcastle, though not stated, the parcels appear to be equally numerous. They are let for a term of years charged with a small rent; and at the expiration of each term a new lease is granted at the old rent, for the same term, on payment of a fine amounting to twenty times the reserved rent. In Newcastle this custom, slightly varying in detail from that of Lancaster, is considered so sacred that houses held under it are treated as if held in fee and made the subject of mortgage and settlement.^b Here we lose sight of the existing burgesses themselves taking the allotments, and instead thereof they receive the rents from other tenants. What were these other tenants who possessed property upon such favourable and peculiar terms? I think we here perceive the first step in the direction of private ownership instead of periodical allotment.^c The original burgess occupiers continue to occupy at the original small rental, the subsequent members of the corporation

^a In order to illustrate that the foregoing customs of allotment for life by seniority, and of the representatives of a deceased holder of an allotment holding it until his successor is appointed, are not impossible developments of the primitive system, it is only necessary to refer to what has been going on in Switzerland, where the primitive commune is undoubtedly in existence. M. Laveleye describes how in some districts the *allmend* is divided into a large number of small parcels, five or six of which are united to form a lot, or else it is divided into as many lots as there are commoners. The occupier holds them for ten, fifteen, or twenty years; or sometimes for life. On the death of a commoner, if his son or widow has a right of common, either of them may retain the parcel until the new allotment. See *Primitive Property* (Eng. Trans.), p. 93.

^b Lancaster, *Mun. Corp. Com. Report*, iii. 1609; Newcastle, *ibid.* iii. 1652. A large part of the property of the city of London is let on leases of a similar nature, viz. for terms of forty years, renewable every fourteen years at a fine certain.

^c Nasse points out that private property first came into vogue with arable land, on which private use, in relation to common use, had a longer duration. See *Agric. Com.* p. 11.

retaining a hold upon the lands by means of the renewing leases and the fines. But before we altogether lose sight of arable and meadow ground as allotments to burgesses, and come upon lands and houses as corporation property, such instances as Beccles, Dunwich, Great Grimsby, and others, still being in possession of large tracts of arable and meadow lands let out at rack rentals for cultivation, and portions of them subject to common pasture by the freemen, seem to intervene. The leases granted at Beccles are from year to year only,^a those at Great Grimsby are let to freemen only.^b Thus, on the one hand, the initial step in private ownership of land is shown; and on the other hand, a stage between corporation communal rights and corporation ownership.

One other phase requires to be spoken of before leaving this portion of our subject. In the primitive communities the crops to be cultivated are settled by a general law decided by, and obligatory upon, the whole community. In the cases brought forward for our present purpose there is only one instance, namely, that of Laugharne, in which settled custom has stepped into the place of legislative ruling, and decided the mode of cultivation. But, in the important instance of Berwick-upon-Tweed, the burgesses-in-guild make by-laws for the preserving, governing, disposing, letting, and demising of their lands. In the exercise of this right, the burgesses regulate the enjoyment of the meadows and stints, and prescribe the conditions of husbandry under which meadow and stint lands may be broken up and converted into tillage, and, in the case of meadows, the terms for which they may be let by the individual burgesses to whom they are allotted.^c At Malmesbury, also, there is an assembly, composed of the aldermen, capital burgesses, assistant burgesses, landholders, and commoners, which has the privilege of deciding on the title of claimants to a share in the allotments.^d And the Beccles Fen Court regulates the property of the corporation, and determines the rights of pasture.^e

Our next group of evidence relates to the rights of pasturage. As we should expect, the instances of this are much more numerous than those we have just been considering. As commerce takes the place of agriculture in the occupations of borough populations, the first agricultural element which gives way to the new state of things would necessarily be the arable lands. These require the time and attention of the cultivator, while pasture lands are still of use when the community has passed from agriculture to commerce, the cattle or horse of the

^a *Mun. Corp. Com.* iv. 2139.

^b *Ibid.* i. p. 77-8.

^c *Ibid.* iv. 2254.

^d *Ibid.* iv. 2137.

^e *Ibid.* iii. 1443-4.

merchant being sent to graze, and afterwards, may be, used for commercial purposes.

One significant fact I wish to point out, namely, that all the boroughs mentioned in our first group as giving evidence of arable allotments afford us evidence of pasture commonage. Of course this was necessary for the full rearrangement of the evidence into archaeological groups. If one set of boroughs had had to be placed together for evidence of arable and meadow allotments, and a totally different set for evidence of common pasturage, we should at this juncture have had to encounter the difficulty, already pointed out, of an argumentative instead of an historical basis for our conclusions. But this is not the case. There are three great sections into which we may divide English municipal boroughs: first, those having arable and meadow allotments, and common of pasture; second, those having only common of pasture; third, those having only absolute ownership. Each of these sections appears to me to be a development from a previous state of things. Having got the first, the two latter are comparatively unimportant, because the distinction is so rigid and so complete; because we never find one section antagonistic to another; because just where we might have expected the old village community to have commenced its decay, or rather its development, there we are most deficient in evidence. The organization of the village breaks up first, and each outlying circle in succession—arable and meadow, then common pasture. Accordingly, it should be considered good evidence, I think, that we nowhere meet boroughs with arable and meadow allotments, and without common pasture, and that we do find boroughs with only common pasture.

Common of pasture in the primitive community was for a limited period over the fields and meadow lands, and all the year round over the commons. At Nottingham there are both these descriptions of pasturage. The fields are commonable from the 12th August to the 12th of November to every burgess or occupier of a toftstead; the meadows are commonable from the 6th July to the 12th August, and from the 12th October to the 24th November; the forest and commons are commonable all the year round.^a At Chippenham, after the meadow grass is cut, the whole mead is stocked in common by the freemen and freeholders, and the common lands, known by the name of *Englands*, are stocked by the freemen during the whole year.^b The remainder of the boroughs men-

^a *Mun. Corp. Repts.* iii. 2001. It is noticeable also in this case that the commonable land *extends round the town* and approaches to the very outskirts.

^b *Ibid.* ii. 1248.

tioned above in the first group of evidence have a perpetual commonage of pasture, but no limited pasture over the arable and meadow allotments. At Lancaster, again, we meet with an illustration of the mode of decay by which these customs are rapidly passing away. Lancaster Marsh was formerly a stinted pasture, but it was inclosed in 1796 and let; but the rents, still called marsh-grasses, are now apportioned among the freemen, according to old custom.^a

Coming to an entirely new list of boroughs, I will notice a few of the most important examples of the rights of common of pasture. It is impossible not to see that these old rights of pasture suggest an earlier period of history—a period which would give back allotments of arable and meadow, together with cultivating rules for the yearly crops. We have a first list of boroughs possessing both periodical pasture over arable and meadow lands, and perpetual commonage over waste lands, and a second list possessing only one of these species of common pasture. The freemen of Huntingdon who reside in what are called commonable houses^b enjoy the right of stocking the common with two cows and one horse, from old May Day till Martinmas, and with four sheep from Martinmas till Candlemas; and have rights of common over five commons belonging to the borough.^c The freemen of Stamford have a right of common over 1,148 acres of land during the time it lies fallow, and over 52 acres throughout the year.^d At Coventry the right of pasture over certain lands called the Lammas lands is for two horses and one cow from Lammas till Candlemas; on some other lands from old Michaelmas till old Candlemas; and on the commons and wastes throughout the year.^e At Northampton the right of common to the freemen lasts from the time the grass is fit to cut till old Candlemas.^f The burgesses of Beverley depasture from the 14th May till the 14th February.^g Every resident freeman of Doncaster may depasture on a tract of land called the *low pastures* during the summer season.^h At Basingstoke every freeholder resident in the borough is entitled to common of pasture from the open tide, or time of the harvest being got in, until All Souls' Day.ⁱ It will not, I think, be necessary to enumerate any further instances of

^a *Mun. Corp. Repts.* iii. 1605. See also *Berwick-upon-Tweed*, iii. 1443-4. Here at the annual meeting of the stint guild, some of the allotments to burgesses are made out of fields which were open pasturage up to 1794.

^b The commonable houses were declared to be so by resolution of the corporation in 1607, and must have been erected before September the 28th, 1601, or since that time, on the site of those ancient houses.

^c *Mun. Corp. Repts.* iv. 2236.

^d *Ibid.* iv. 2530.

^e *Ibid.* iii. 1801.

^f *Ibid.* iii. 1972.

^g *Ibid.* iii. 1459.

^h *Ibid.* iii. 1504.

ⁱ *Ibid.* ii. 1106.

this periodical right of common, or to set out here the list of boroughs and cities which possess the right of common of pasture all the year round. The list, as I have said, includes all those above mentioned as giving evidence of arable allotments, and it has been published in a modified form from the sources I have used for this Paper in the shape of a Parliamentary Paper.* But before leaving this portion of our subject let me note how the old festival days of May Day, Martinmas, Candlemas, old Michaelmas, old Candlemas, and the old Lammas customs remind us that we are in the presence of early historic life, and, with especial reference to agricultural customs, also in the presence of old Teutonic village life.

There is only one remaining feature of the old agricultural community to note as still existing among modern English municipal institutions. It is not very important of itself, but in connection with what has been already noticed it assumes a relative position to the other portions of our researches. The old village community was organised and self-acting, and it possessed a body of officers and servants which practically made it independent of all outside help. And we meet with such officers as the brook-warden at Arundel, the field-grieve at Berwick-on-Tweed, the pound-keeper^b or pound-driver, and the pinder in many different towns, the grassmen of Newcastle-on-Tyne, the warrener of Scarborough, the keeper of the greenyard at London,^c the hedge-lookers of Lancaster and Clitheroe, and the mole-catcher of Arundel, Leicester, and Richmond, all relating to the old primitive village homestead; with others such as the haymakers of Rochester, the hayward in fifteen different towns, the field-driver of Bedford, the herd, nolt-herds, town swine-herds, and neat-herds of Alnwick, Newcastle, Shrewsbury, and Doncaster, relating to the old system of meadow cultivation;

* *Return of Boroughs and Cities in the United Kingdom possessing Common Lands.* (House of Commons Papers, 1870. No. 448.) The date of the *Municipal Corporation Commission* was 1835, and during this interval great alterations took place.

^b There is no more ancient institution in the country, says Sir Henry Maine, than the village pound: it is far older than the King's Bench, and probably older than the kingdom. *Early Hist. of Inst.* p. 263.

^c See Halliwell's *Nares' Glossary*, *sub voce* "Green Yard." The Green Yard is situate in Whitecross Street, and the duty of the keeper is to receive all fines, dues, and costs incidental to the straying of animals in the city. We have evidence here that the municipal history of London is not to be sought exclusively from Roman history, or from a developed political system. The Green Yard carries us further back than either of these, and associates a portion at all events of the early history of London with the early history of other municipal boroughs.

and finally with such as pasture-masters, moor grieves, moormen, mossmen, moor wardens, fen reeves, and woodwards, who indicate the outlying pastures and woods of the old community. Such important facts as these must suggest at least that an agricultural organisation was the earliest form of many English municipal towns,^a and, coupled with the facts already set forth, we can go a step further than this. The officers of the old village community were sometimes paid by an allowance of grain, more generally by an allotment of a piece of cultivated land. And so are some officers of the English municipality. The aldermen of Nottingham were paid by an allotment of the seventh part of a meadow to each, called an *Alderman's Part*. The chamberlain, mace-bearer,

^a I must be permitted to refer to the Introduction to my *Index of Municipal Offices* (Index Society, 1878) for further information on this head, see pp. 26-32. I, however, append here a full list of the agricultural officers, as it may be useful for easy reference: the information is taken from the *Reports of the Municipal Corporation Commission* (1835). The town names printed in small capitals indicate that the office was there obsolete in 1835:—

- | | |
|---|--|
| <i>Beadle and Poundkeeper</i> , Rochester. | <i>Moor Grieves</i> [<i>Gerefa</i>], Alnwick. |
| <i>Brookwarden</i> , ARUNDEL. | <i>Moormen and Mossmen</i> , Lancaster. |
| <i>Driver of Commons</i> , Rye. | <i>Moor Wardens</i> , Axbridge. |
| <i>Drivers of Cattle</i> , Kidwelly. | <i>Neat Herd</i> , Doncaster. |
| <i>Fen Reeve</i> , Aldeburgh, Dunwich. | <i>Nolt Herds</i> , Newcastle on Tyne. |
| <i>Fen Reeves</i> , BECCLES, Southwold. | <i>Overseers of Common</i> , Llantrissant. |
| <i>Field Drivers</i> , Bedford. | <i>Pasture Master</i> , Beverley, York. |
| <i>Field Grieve</i> [<i>Gerefa</i>], Berwick-on-Tweed. | <i>Pindar</i> , Nottingham. |
| <i>Foreman of the Commons</i> , Huntingdon. | <i>Pindar Keeper of the Meadows</i> , Nottingham. |
| <i>Grassmen</i> , Newcastle-on-Tyne. | <i>Pinder</i> , Doncaster, Hedon, Hull, Orford, Richmond |
| <i>Haymakers</i> , Rochester. | (Yorkshire), Scarborough. |
| <i>Hayward</i> , Basingstoke, Berkeley, Blandford Forum, | <i>Pinders</i> , Cambridge, Pontefract. |
| Brading, Christchurch Twynham, Dorchester, | <i>Pound Driver</i> , Pevensay, Winchelsea. |
| Godmanchester, High Wycombe, Kenfig, Lyme | <i>Pound Keeper</i> , Aberavon, Canterbury, Hythe, |
| Regis, NEWPORT (MONMOUTHSHIRE), Poole, | Llanelly, Newport (Pembrokeshire). |
| Portsmouth, Reading. | <i>Pound Keepers</i> , Kidwelly. |
| <i>Haywards</i> , Aberavon, Loughor, Neath. | <i>Swine-catcher</i> , Congleton. |
| <i>Herd</i> , Alnwick. | <i>Swineherd</i> , Shrewsbury. |
| <i>Hog Driver</i> , Hythe. | <i>Tender of the Town Wood</i> , Congleton. |
| <i>Keeper of the Green Yard</i> , London. | <i>Tenters of Common</i> , Derby. |
| <i>Keeper of the Pinfold</i> , Alnwick. | <i>Warrener and Game Keeper</i> , Scarborough. |
| <i>Lookers of Hedges and Ditches</i> , Clitheroe, Lancaster. | <i>Woodward</i> , Havering, Nottingham. |
| <i>Mole Catcher</i> , Arundel, Leicester, Richmond (Yorkshire). | |

and mayor's common serjeant have likewise an allotment.^a The alderman is the chief man of the borough of Malmesbury, and he is paid by a piece of land called *the alderman's kitchen*.^b The field grieve of Berwick-upon-Tweed has an allowance of money in lieu of a meadow.^c The portreeve, haywards, and other officers of Aberavon have a piece of inclosed hay land divided amongst them. Here, again, it will be observed that Nottingham, Malmesbury, Berwick-upon-Tweed, and Aberavon retain in this respect also the archaic characteristics of their institutions. We meet with remnants also of this old custom elsewhere. The hayward of Godmanchester receives an annual sum of money in lieu of land.^d The bailiffs of Northampton are allowed the rent of a piece of ground called *the Bailiff's Hook*,^e and the bailiff of Uxbridge possesses a piece of ground called *Bailiff's Wall*.^f The mayor of Queenborowe has two leezes, or right of depasturing a certain number of sheep, cows, and horses all the year.^g The pinder of Doncaster has a small piece of land in Doncaster field called *the Pinder's Balk*.^h And we have some examples of this system fallen into disuse in the name of *Bellman's Acre* at Newport, which is still extant, though the office is obsolete. Now it appears to me a very important consideration that this old custom of payment in kind, and the retention in some cases of the old field name, should have lasted down to modern times with so pertinacious a grasp. Civilised political economy abhors payment in kind; agricultural economy, as we know from instances both in England and elsewhere, sanctions it during the early periods of its growth. We see it giving way in Berwick-upon-Tweed, Godmanchester, and Northampton; and a thorough investigation of field names would, I doubt not, restore much more evidence of this nature to the domain of history.

What, then, is the result of this cursory though, I hope, suggestive examination of a new phase of English municipal history? We have been able to construct, out of materials existing in the nineteenth century, portions of a social organisation which belongs to the most primitive period of Aryan history—an organisation that was equally the heritage of the early Romans as of the early Teutons; of the Celts as of the Hindoo. It is Aryan, therefore, and not merely Teutonic; and, moreover, it is early Aryan. The true significance, therefore, of the facts now brought to bear is the mere existence, in howsoever slight a form, of institutions which have had to stand still, while national history

^a *Mun. Corp. Com.* iii. 1991.^b *Ibid.* i. 80.^c *Ibid.* iii. 1442.^d *Ibid.* iv. 2237.^e *Ibid.* iii. 1967.^f *Ibid.* ii. 1094.^g *Ibid.* ii. 831.^h *Ibid.* iii. 1500.

and social history have uniformly progressed. Our information, it is true, is very far from being perfect; but this, I venture to think, is due rather to the want of available materials from which to compile it than to any deficiency of actual facts. My chief source of information has been the *Appendices to the Reports of the Municipal Corporations Commission* issued in 1835. But for historical purposes this is nothing like complete. The Commissioners pursued that line of conduct which is too generally adopted by politicians and statesmen. They imagined that the history of the past can have nothing whatever to with the legislation of the future,^a and they therefore did not pretend to collect any *historical* information. The result, therefore, of the foregoing pages is more than ever remarkable for the clear and decisive way in which the evidence groups itself as belonging archæologically to the old primitive village community. Incomplete as our evidence is, it is complete enough to do more than suggest that the early history of English municipalities must be sought for, not in Roman records, but in Teutonic.^b

But though we have to complain of the incompleteness of our historical data, there can be no doubt that, so far as they go, they indicate with scarcely any hesitation the archaic period to which they belong. To attempt a detailed proof of this would be wearisome; and, unfortunately, our county and local historians pay more attention to genealogies and biographical essays than to local institutions. Let me, however, point out one or two examples where the facts described above can be definitely shown to be the index to a state of things existing long prior. Marlborough is one of the boroughs which I have taken as evidence of an allotment of arable lands on the principle of the village commune system. The statement as to Marlborough is very meagre in the *Report of the Municipal Corporations Commission*. Turning to Waylen's *History*

^a See Mr. Hogg's Protest, p. 9.

^b It will not do to multiply instances of want of information in the Reports I have mainly relied upon for evidence of the existence of primitive agricultural institutions in English municipal towns, but I must advert to this question slightly. The Inclosure Commissioners were quite aware of the existence of such institutions, for one of the class of rights spoken of as difficult to deal with under a general Inclosure Act as proposed in 1844 was that of the freemen of boroughs. (See *Evidence taken before the Committee on Commons Inclosure*, Questions 42, 44, *et seq.*) But so late as this year (1878) the lands of the Corporation of Oxford have been dealt with under the Inclosure Act, and some very curious information is contained in the evidence given before the House of Commons Committee as to the nature and tenure of these lands, information which is entirely wanting in the *Report of the Municipal Corporations Commissioners*.

of Marlborough,^a we find that so late as 1823, or just twelve years before the Reports of the Municipal Corporations Commission, the older customs had existed. The appearance of the place, we are told, was precisely that of common field land, the allotments being divided by broad lanchets or strips of meadow land and subjected to common pasture during the autumn, while over the Thorns, or Common, right of continual pasturage existed. Nothing could be more suggestive of the method of cultivation under the village community than this; and the fact proved in one borough clears the way for a similar proof in all the other instances. We need not search far for these. The two boroughs of Hertford and Sutton-Coldfield, for instance, afford us no evidence, except common pasture in the latter case, on the subject I have treated of in the preceding pages. Yet a commission under the 5th Edward III. ascertained that two meadows at Hertford belonging to the corporation were usually mowed—the one, once in three years, being depastured the other two; the other, for two successive years and depastured every third:^b and in 1797 every housekeeper of Sutton-Coldfield might take in one acre of common, plough it for four years, then sow it with clover and lay it in the common again, after which he might take another acre and work it in like manner.^c

Gathering up the threads of the various facts now brought under notice, it does not appear to me that more complete evidence of the Teutonic substratum underlying the constitution of English municipal life could well be found. It must be borne in mind that I do not claim everything municipal as Teutonic. I only resist the claim that everything municipal is Roman by showing that the underlying organisation is based upon agricultural communities of an early type, which cannot have been Roman. We have practically restored to the domain of history those features of English municipalities which owe their origin to the old Teutonic village community. Such towns as Nottingham, Malmesbury, Berwick, Laughtarne, Chippenham, Aberavon, Marlborough, Arundel, Kenfig, affording us instances of two phases of the threefold relationship to the land occupied by the primitive villager—other more important towns still supplying us with one of these phases—others again supplying us with detached portions—must be acknowledged to make up a tolerably complete picture of the whole primitive community itself, and a picture withal which casts its shadows and its lights upon the whole municipal history of England.

^a Page 103.

^b Turnor's *Hist. of Hertford*, pp. 62, 63.

^c Eden's *State of the Poor*, vol. iii. p. 749.

Such then is the nature of those primitive village institutions which are still to be traced among our municipal boroughs. Historians have before now admitted the value of such evidence as I have here grouped together, and have admitted that English municipal history wants re-examining. The present is rather the foreshadowing of that task than the commencement, but at all events it affords a more complete picture of the case than Professor Stubbs has been able to present when he can only deduce from the instances of York, Oxford, Colchester, &c., a proof that "the common lands of the *burh* testified to its origin in a state of society in which the mark system was not yet forgotten."^a

I have the honour to be,

My dear Sir,

Your very faithful Servant,

G. LAURENCE GOMME.

To William J. Thoms, Esq., F.S.A.

^a *Const. Hist. of England*, i. 93.

XXI.—*Excavations at Mount Caburn Camp, near Lewes, conducted in September and October, 1877, and July, 1878. By Major-General AUGUSTUS LANE FOX, F.R.S., F.S.A.*

Read June 20, 1878.

ALTHOUGH many places from their extent may have possessed greater importance in early times, no British camp is perhaps better known to ourselves than Mount Caburn. Situated, not in the midst of a deserted heath as some of them are, but in the centre of a populous district, a very conspicuous feature from the town of Lewes, and close to the junction of the railways from Eastbourne and Newhaven, it has necessarily attracted the attention of all who pass that way. Various conjectures have been hazarded in local histories as to its origin and uses, and more numerous by far must have been the unrecorded speculations of the curious during the long period that Lewes has figured in history.

To put such speculations to the test, and determine by means of any relics that might be discovered the date of so interesting a monument, appeared to me a matter worthy of the attention of archæologists, and I therefore applied to Mr. Brand, the Speaker of the House of Commons, who is the owner of the property, for permission to dig, which he kindly granted, and the excavations were commenced on the 2nd September, 1877, and continued during the greater part of the month.

Mount Caburn Camp is situated at the south-eastern corner of a block of hills detached from the range of the Southdowns by means of two valleys, through which flow the Ouse and its tributary from Glynde. It appears to be generally admitted by all writers on this district that the valley of the Ouse formed an arm of the sea in prehistoric times, and that the water extended up the fork formed by the two valleys as far as Glynde on the east, and Hamsey above Lewes on the west; and as the whole district to the north was occupied by the dense and at that time probably impassable forest of Anderida, the Caburn range must have

been favourably situated for defence on all sides. An irregular oval, two miles in length and one in breadth, having a ridge of lofty hills all round the outside, and a sheltered valley in the middle which opened into the Ouse valley on the south-west, and afforded easy access to what was then the sea, this position appears to have been in every way adapted to be the home of an independent tribe.

Numerous traces of early habitation and of terrace cultivation are to be seen in the central valley; and the bounding ridge of hills on the south side, overlooking the Ouse, is defended by two camps, the larger one, which I have named Ranscombe Camp to distinguish it, because situated on the farm of that name, above Southerham, and the smaller one, properly termed Mount Caburn, or the Caburn, which is the subject of the present communication, situated at the south-eastern corner of the range in question, and commanding an extensive view of the whole.

The presence of two camps in such close proximity has afforded matter for speculation.

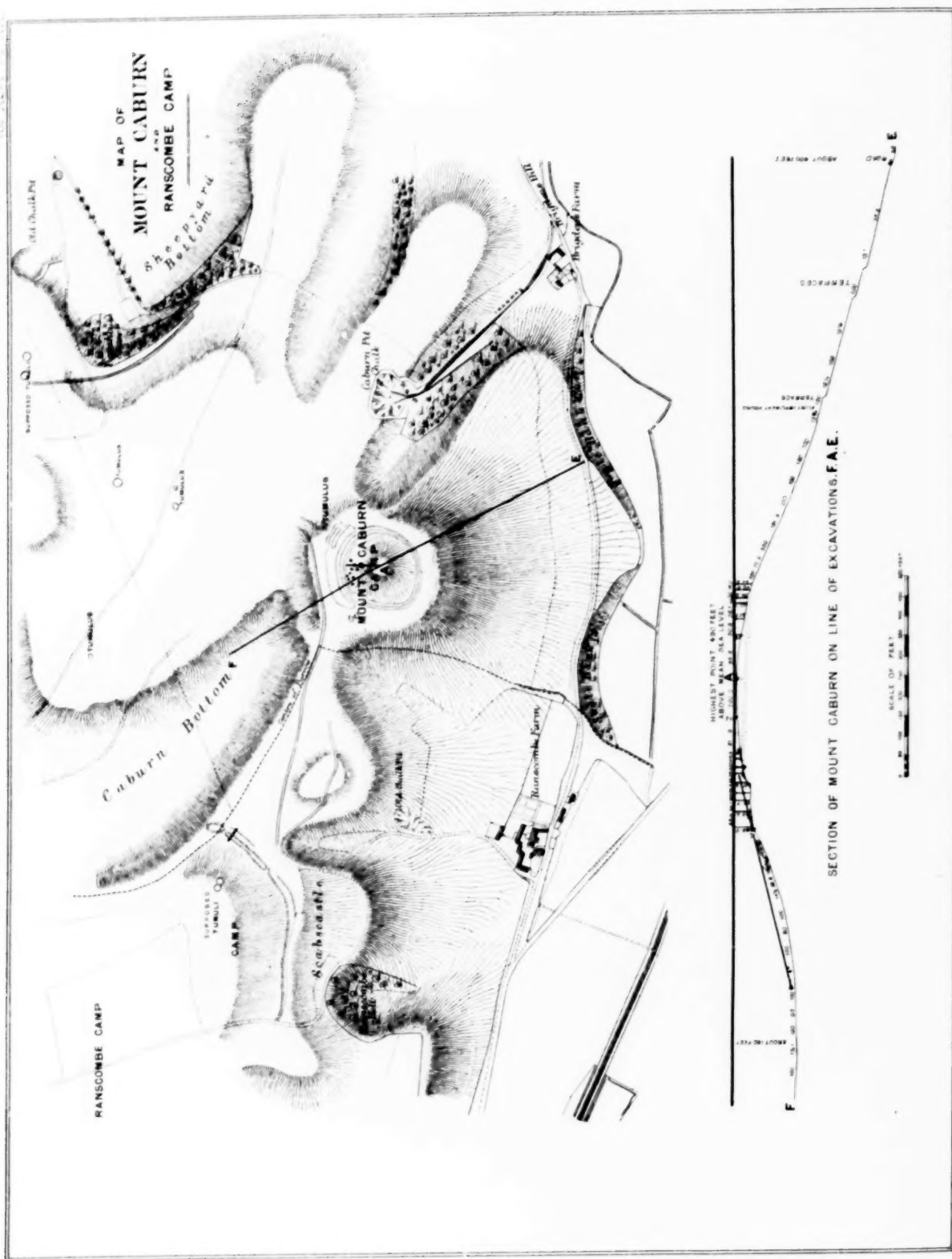
The Rev. T. W. Horsfield, in his *History of Lewes*, supposes the western camp to have been thrown up by the Romans, and that the smaller camp on the east may have been occupied by the Regni, who possessed the whole of this region at the time of Vespasian's expedition.^a In my paper on the hill forts of Sussex, published in the *Archæologia*,^b I adopted the view of Mr. Horsfield; at the same time suggesting, however, that the two camps might be of different dates. Subsequent examination, when the crops were off the ground, has confirmed me in the opinion that the western earthworks are certainly the ramparts of a distinct camp, the defensive line of which can be traced all round, but of British origin, and that it has none of the characteristics of a Roman camp.

Another writer, the Rev. E. Turner, supposes that the eastern work, that is Mount Caburn, was not a camp but a place of druidical worship, and he supposes that the hill round which the ramparts are drawn was of artificial construction.^c This we might perhaps assume from the lay of the land to be an error, even had not the natural formation of the hill been proved conclusively by my recent excavations. Lest however I should be supposed to approach the subject with a professional bias in favour of camps, I prefer to quote the authority of the Rev. W. De St. Croix, vicar of Glynde, who in commenting on Mr. Turner's theory

^a *The History and Antiquities of Lewes and its vicinity*, by the Rev. T. W. Horsfield, F.S.A. vol. i. p. 37, 1824.

^b *Examination of the Hill Forts of Sussex*, by Col. A. Lane Fox, *Archæologia*, vol. XLII. p. 35, 1869.

^c *On the Military Earthworks of the South Downs*, by the Rev. E. Turner, *Sussex Archæological Collections*, vol. iii. p. 183.



says,^a "No one with an eye for a defensive position could have failed to appreciate the natural advantages for defence afforded by Caburn." The place in fact has all the recognised characteristics of a British fortress (Plate XXII.). Its nearly round form is given to it by the roundness of the hill. A single line of rampart and ditch surrounds the hill on all sides, but on the northern side, where the natural defences are weakest, the rampart is heightened, and an additional rampart and ditch added on the outside. Moreover the rampart at the entrance is thrown back so as to give a cross fire on the approach, in the same manner as at one of the entrances at Cissbury and many other British entrenchments.

Mr. Turner, following out his idea of a place of worship or burial, derives the name of the place from *Carnbrauh*, but there can be little doubt, I think, that the derivation given by Mr. De St. Croix is the correct one, viz. *Caerbryn*, or fortified hill, and, as he says the addition of the word *mount* is mere tautology, it should be designated "The Caburn," and it appears that it was so called by some of the older inhabitants even in his own time.

In 1819-20, Dr. Mantell, the well-known geologist of Sussex, opened several tumuli on the hill near the Caburn, and as the whole of this range sometimes goes by the name of Mount Caburn it has been supposed that he excavated in the camp. This however is a mistake. I have taken pains to ascertain all that had been done previously to my commencing operations on the 2nd September, 1877, and I find that undoubtedly the camp itself had never been touched.

The tumuli opened by Dr. Mantell were of two kinds; ^b the larger ones contained interments by cremation, the bones being preserved in rudely-baked urns and accompanied by beads of jet and amber, green glazed pendent ornaments, bone circlets, amulets of flint, chalk, pottery, and sandstone, and flint celts and chisels. Some of the beads and pottery have been deposited in the British Museum; these, Dr. Mantell, together with the Rev. James Douglas, author of *Nenia Britannica*, who accompanied him, attributes to the earliest Gaulish colonists of this country. Whether the term Gaulish can properly be applied to these earliest tumuli may be questionable. The other sort were for the most part small tumuli in clusters. An oval space surrounded by a row of large flints appeared to have been cleared in the chalk rock, within which the body was placed full length, an iron spear on one side, a sword on the other, a knife in the hand,

^a *The Parochial History of Glynde*, by the Rev. W. De St. Croix, *Sussex Archaeological Collections*, vol. xx. p. 47.

^b *A Day's Ramble in and about Lewes*, by Dr. Mantell, p. 133. Horsfield, *History of Lewes*, p. 46.

and a shield between the legs. The earth was heaped over the body and the tumulus covered with turf. One tumulus to the north of "Ox Settle Bottom," the name given to the central valley above mentioned, contained interments both by cremation and inhumation.

Mr. De St. Croix afterwards assisted in the opening of other tumuli on the hill, under the direction of a Committee of the Sussex Archaeological Society, but nothing was found beyond ashes, and a few human teeth.^a He also gives an account of a discovery made near the limeworks beyond Glynde, at a place called Gill's Graves,^b in which some iron knives were found; these are now in the Lewes Museum, and appear to be Saxon in their form. The graves here were cut east and west, and the skeletons appear to have been extended, sometimes with the legs crossed: no warlike implements were found. This, so far as I can ascertain, is the sum total of all that had been discovered in the immediate vicinity of the camp, and it is not very conclusive. We have evidence of people of the bronze and iron ages, but to what precise period or race the latter belonged we derive no exact information from any records that have been preserved. Nothing, however, of Roman workmanship had been discovered anywhere in the immediate proximity of the camp.

Mount Caburn is remarkable amongst camps for the absence of flint flakes on the surface, a point which I noticed in my former communication to the Society. This may, perhaps, be accounted for to some extent by the steepness of the hill-sides, which would cause them to fall or be washed down to the bottom in course of time. Towards the foot of the southern slope of the hill, on a line of terrace marked in the general section of the hill, I found a number of flakes, and amongst them a rudely-chipped celt. It is of a form and character common to Cissbury, near Worthing, and found occasionally elsewhere in these parts. I also obtained a number of similarly chipped implements from Mount Harry, on the opposite side of Lewes, where they were found by workmen close under the turf.

The part of the camp which appeared to promise the best results showed a number of small depressions, covering the whole of the dome-shaped hill which fills the interior space within the ramparts. Of these I counted as many as fifty, at distances of from 15 to 25 feet apart, arranged more or less in clusters, averaging about 12 feet in diameter, and each having a central depression of not

^a *Sussex Archaeological Collections*, vol. xx. p. 53, where three of the knives are engraved.

^b Gill appears to be a mythical personage connected with this locality, and the often-told story of throwing a hammer from the top of the hill is repeated of him.



more than 9 or 10 inches. So shallow indeed were they as almost to escape notice, yet sufficiently defined, when examined closely, to direct the workmen where to dig. In my paper on the hill forts of Sussex^{*} I had alluded to them as being probably the remains of huts or pit dwellings, but the discovery of shafts in the pits at Cissbury subsequently had led some persons to suppose they might possibly be the closed-up mouths of shafts sunk for flints. They were much smaller, however, than any of the Cissbury pits. One only, marked on the plan as the "large pit," situated to the north of the centre of the camp, was 35 feet in diameter and 4 feet deep, the earth from it having been thrown up in a half circle round it towards the north.

My operations were restricted, by Mr. Brand's wish, to the north side of the hill, in order that the view of the hill might not be disfigured by chalk thrown up on the side of the valley. And it was also understood that I was to replace the turf. To these stipulations I readily assented, as the north side being the side of the more important entrenchments was naturally the one on which I should have commenced operations. From three to five men were employed daily.

The following are the results of the examination of the thirteen small pits, including as two those I have marked as "twin-pit" on the plan. All were situated to the north-west of the large pit and between it and the ramparts. Four were circular, from 5 to 7 feet in diameter at top and somewhat less at the bottom; five were oval, 6 to 7 feet in length at top and of various breadths. Three oblong, averaging 6 by 4 feet, and one an irregular oblong of about the same dimensions. The pits averaged 5 feet in depth, the deepest being 6 feet 2 inches and the shallowest 3 feet 6 inches. The long diameters of the ovals and the long sides of the oblongs varied in their direction, seven being nearly east and west and two nearly north and south; had the excavations been confined to the seven it would probably have been assumed that they were all east and west, and an argument in favour of graves would have arisen from the circumstance. The sides of the pits were rudely excavated, some more so than others, and no attempt at dressing was observed in any of them; the angles of the oblongs were slightly rounded, except in the case of No. 3, where the angles were sharp; in most of them a man might have laid down crouched up at the bottom, but in Nos. 7 and 8 and the circular hole of the twin-pit the bottoms were too small to have contained a human being in any other posture than squatted in a

^{*} *Archæologia*, vol. XLII. p. 39.

very contracted form, with the back and knees resting against the opposite walls; this at once dispels the idea that the pits themselves could ever have been intended for habitation. There was no puddling in any of them except No. 4, where the bottom appeared to have been puddled with clay, but only in one spot about 2 feet square in the centre.

In regard to the filling it was noticed that the majority were filled with mixed soil consisting of dark mould mixed with chalk rubble, but two, viz. Nos. 1 and 4, were filled with pure white chalk without any mixture of mould; where the rubble was mixed it contained animal bones and fragments of pottery all through, whereas in the two that were filled with pure chalk the relics were found at the bottom only, showing that in the latter case the pits had probably been filled up at once with chalk either from the pit itself or freshly excavated from elsewhere, whereas the mixed filling had more the appearance of a gradual accumulation. In the pure chalk filling it was also noticed that the large blocks were in the middle, showing that the pits had been filled from all round at the same time. But there was no difference in the form or position of these pits, which might appear to favour the opinion that they were constructed or used for a different purpose to the others. The brown surface-mould could in most cases be easily distinguished from the filling; it had accumulated to a depth of from 10 inches to a foot in the centre of the pits and from 3 to 4 inches at the edges; the chalk margins of the pits were better defined, and stood higher in some pits than others; for instance, Pit 7 is shown on the plan much smaller than No. 4 adjoining, but this arises from the measurement being taken lower down on the shelving sides, because the line of the sides could not be defined with certainty at a greater height than 3 feet 8 inches from the bottom; had they been preserved to the full height of 5 feet 3 inches, which was the real depth of the pit, it would have appeared larger on the plan.

The following analyses of some of the mixed soil from Pits Nos. 7, 9, and 8 have been kindly made for me by Mr. David C. Robb through the instrumentality of Professor Rolleston, F.R.S. :—

ANALYSES OF SOIL FROM PITS 7, 9, 8.

	Pit 7.	Pit 9.	Pit 8.	Zöller's examination of clay without vegetation (for comparison).
Phosphoric acid, P_2O_5 , per 1000 parts dried soil	2.4	Something very much smaller (say 0.2), but an accident prevented accurate analysis	2.24	Not stated
Residue on evaporating aqueous extract of soil containing— Nitrates, Albuminoids, Chlorides, and Sulphates per 1000 parts of dried soil	0.560	0.640	0.820	0.292
After ignition:				
Residue—chlorides and sulphates	0.230	0.260	0.340	
Less—albuminoids and nitrates	0.370	0.380	0.480	
Nitrates, directly determined	.	0.034		
Albuminoids, by deficit	.	0.346		

Especial attention was paid to the position of any oyster shells, as oysters in this part of the country may be regarded as a sure indication of Roman or post-Roman times. It was found that in most of the pits these shells were present in the surface-mould, but in no case was an oyster shell found in the filling, or at the bottom. The same remark applies to the large *Helix aspersa*, but the *Helix nemoralis* was found in great abundance all through the pits. The *Helix aspersa* is found on the downs at the present time, but not the *Helix nemoralis* at this level. Fragments of charcoal were found occasionally in many of the pits, but no signs of burning in the pits. Small fragments of pottery, from one to two inches across, were found in all the pits; these fragments were of three kinds, as detailed more particularly hereafter; viz. a fine smooth quality, sometimes ornamented, a coarser kind apparently hand-made, harder, and mixed with small grains of sand, and a still coarser kind, soft and pasty, and mixed with large grains of silex, also hand-made. No fragment of Roman pottery was found in any of the small pits, either in the surface-mould or the filling; and I could

detect no difference between the pottery found in the surface-mould and that of the filling. The animal remains, as identified by Professor Rolleston, were those of domesticated animals,—ox, *Bos longifrons*, pig, *Sus scrofa*, horse, *Equus caballus*, both goat, *Capra hircus*, and sheep, *Ovis aries*, with occasional bones of roedeer, and in one pit badger (see the Relic Table annexed to this paper).

The following were the relics discovered. In No. 1 pit, with the exception of a small piece of pottery at 3 feet 8 inches in the white chalk filling, and a sea-shore pebble, oval, 4 inches long, and rubbed all along one side (Plate XXIV. fig. 21), found at 5 feet 2 inches, nothing was discovered till we came to the bottom, 6 feet 2 inches from the surface, where we found the lower part of a vase (Plate XXV. fig. 57), a piece apparently of iron scale armour (Plate XXIV. fig. 8), and a bone comb (Plate XXIV. fig. 11). The vase (Plate XXV. fig. 57) was apparently hand-made, black, without grains of quartz or silex in its composition, and had a circular base 3 inches in diameter. The iron scale of armour (Plate XXIV. fig. 8) was of rhomboidal form, 3 inches by 2, and about one-eighth of an inch thick, slightly curved, having marks of both iron and bronze studs, which appeared to have secured it to the corselet. It has marks of eight iron studs and three green spots shewing where copper or bronze studs have rested against it in the intervals between the iron ones. I cannot connect it precisely with any other example that has come to my notice; it is unlike the scales of bronze armour discovered at Hod Hill,^a *lorica squammata*, or that resembling the scales of snakes figured in Lindenschmit's *Altherthümer*, Heft. xii. Taf. 4, being considerably larger than either; neither does it resemble exactly that found at Avenches, the ancient Aventicum, and figured in Demmin's work,^b and in that of Baron Bonstetten.^c It has, to my mind, more the appearance of a scale of Brigandine armour of the fifteenth century, but its position of course precludes the possibility of its being of that date; it is possible it may be part of the cheek-piece of a helmet, or even a piece of the patching of an iron pot. Like all the relics described in this paper, it was exhumed under my own eyes, and no work was conducted at any time during my absence. The Gauls appear to have used iron armour, like the Romans,^d and the Britons of this region were armed like the Gauls.^e The bone comb (Plate XXIV. fig. 11) is of a well-known form, and deserves particular attention; it is flat,

^a Warne, *Ancient Dorset*, p. 155. Roach Smith, *Collectanea*, vol. vi. p. 8.

^b *Weapons of War*, by A. Demmin, p. 120.

^c *Recueil d'Antiquités Suisses*, Pl. xiii. fig. 3.

^d Meyrick, *Critical Inquiry into Ancient Armour*, vol. i. p. xlvii.

^e *Horæ Ferules*, p. 187. Pomponius Mela, lib. iii. c. 6.

5½ inches in length, with seven teeth at one end and an oblong enlargement at the other. It is composed of the outside portion of a deer's horn, to the curve of which it conforms slightly. It is without ornament, with the exception of two lateral grooves at the base of the teeth. When found it was in eleven fragments; but it has been carefully restored, soaked in size, and is now perfect, with the exception of the tips of three of the teeth. In my collection are several bone combs of the same kind; one from Lancing in Sussex, found by Mr. Medhurst, has nine teeth; another, from Lancing, has eight teeth and a cross on the handle; a third, from Lancing, has six very short teeth, not more than a quarter of an inch in length, and pointed so as to resemble rather a succession of points and scallops than a comb. One also in my collection, from Portland, near Weymouth, found by Mr. Medhurst, has seven teeth; another, from Jordan Hill, near Weymouth, has eight teeth; these latter were associated with Roman remains. A similar comb, with six teeth, ornamented with five lateral grooves in the same position as in the one from Caburn, was found in 1853 by Mr. Henry Rhind, F.S.A., in the broch of Kettleburn, near Wick, Caithness,^a associated with objects of iron, and a pair of bronze tweezers of the pattern termed by Mr. Franks Late Celtic. With it were also found a number of sea-shore pebbles, the remains of domesticated animals, including horse of two sizes, and pottery of different kinds. Another was found in a broch at Thrumster, Caithness, in 1782;^b a similar one was found in the ruins of the broch of Burgar in Orkney, and is described in the *Archæologia Scotica*.^c Another from the broch of Burrian, North Ronaldsay, Orkney, is figured in the Catalogue of Antiquities in the Museum of the Society of Antiquaries of Scotland;^d it has ten teeth, and was found with fourteen others in association with seven rubbing bones or calendering implements and the phalangeal bone of a small ox, having engraved on it two of the symbols common on the sculptured stones of Scotland, and also in association with iron implements and objects having the dot and circle, to which attention will be drawn hereafter as being connected with the early iron age. A similar comb was found in the Roman Baths at Hunnum;^e another was found at Stanwick, in the North Riding of Yorkshire, a place especially connected with relics of the Late Celtic age, which

^a *Archæological Journal*, vol. x. p. 218; *Catalogue of Antiquities in the Museum of the Society of Antiquaries of Scotland*, p. 54; in both of which it is figured.

^b *Catalogue of Museum of the Society of Antiquaries of Scotland*, p. 56.

^c *Archæologia Scotica*, vol. iii. p. 44, pl. v. fig. 3, and *Archæological Journal*, vol. x. p. 218.

^d *Catalogue*, p. 59. *Proceedings of the Society of Antiquaries of Scotland*, vol. ix. p. 559.

^e Hodgson, *Northumberland*, part ii. vol. iii. p. 320.

have been found in pits in ancient entrenchments;^a a comb of this kind, ornamented with the dot and circle pattern, was found in the entrenchment at Spettisbury, near Blandford, with an iron sword-blade and other objects of iron now in the British Museum.^b

At the meeting of the Somersetshire Archæological Society, in 1870, the Rev. W. Barnes described the excavation of some pits in the outer camp at Maiden Castle, which were round, and very clearly cut, 4 to 7 feet deep, filled with black mould, and containing the bones of animals, fragments of pottery, one of the stones of a quern, and, amongst other things, a flat long comb with the teeth at the end. These pits he considered to be refuse pits, and not dwellings.^c Similar combs were found by Mr. Adlam, in 1868, in pits at Highfield, near Salisbury;^d and one by the Rev. J. Austen near Badbury Camp, Dorset.^e Mr. E. T. Stevens has drawn attention to the resemblance of these combs to those used by the Esquimaux, and the Basutos of South Africa for scraping fat from the backs of skins. Since my excavations at Mount Caburn were completed, Mr. Park Harrison, in examining the flint mines at Cissbury, has discovered several small pits in all respects similar to those of Mount Caburn, and containing pottery of a similar character in fragments, with animal remains; and in one of them a bone comb of exactly the same description, having ten teeth at the end which were broken off. These pits had been excavated in the rubble of a filled-up shaft, which had been formed for obtaining flints during the stone age, thereby proving the small pits in which the comb was found to have been made at a much later period, when the flint shafts had been filled up and forgotten:^f evidence in all respects similar to that by which it has been determined that the ramparts at Cissbury are more recent than the flint mines,^g though not proving that the ramparts are of the same age as these small pits, the latter being possibly, if not probably, more recent still. Another comb of this kind, in the British Museum, resembles the one from Mount Caburn still more closely, having, in addition to the teeth, the same oblong enlargement at the other end. It was found in a camp on Danbury Hill, near Nether Wallop, Hampshire,^h and is ornamented with the dot and circle pattern. Another in the same museum has also the oblong enlargement at

^a *Archæological Journal*, vol. x, p. 218. *York Volume of the Archæological Institute*, p. 6.

^b *Proceedings of the Society of Antiquaries*, vol. iv, p. 190.

^c *Proceedings of the Somersetshire Archæological Society*, vol. xvi, p. 23.

^d *Flint Chips*, by E. T. Stevens, p. 65.

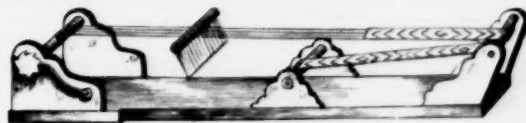
^e *Ibid.* p. 65.

^f *Journal of the Anthropological Institute*, vol. vii, p. 422.

^g *Ibid.* vol. v, pp. 368-377.

^h *Stone Monuments, Tumuli, and Ornaments of Remote Ages*, by J. B. Waring, p. 74, pl. 93, fig. 13.

the reverse end; the seven teeth in this comb are blunt and rounded at the points, showing that it could not have been employed for combing hair, and may possibly have been used for driving the weft against the cloth in weaving; the association of such combs in the broch of Burrian, where fifteen of them were found, with seven rubbing-bones or calendering implements, made of the jaw-bones of whale, and used for smoothing the web after it is woven, appears to confirm this opinion as to their use.^a The use of such combs in the manufacture of ribbons may possibly have survived to a comparatively late date in some places. From the island of Björko, Dr. Hjalmar Stolpe exhibited at the International Congress of Prehistoric Archaeology at Stockholm, in 1874,^b some of the antiquities of the later iron age, supposed to date about the eighth century of our era, amongst which was a long comb of this kind with eight teeth, and having what appeared to have been an iron continuation attached to it. It was believed to have been used in weaving ribbon, and was ornamented with the dot and circle pattern. The small looms in which ribbons are woven are still in use in Norway and parts of Sweden; a drawing of one from Dr. Hazelius's museum of native utensils at Stockholm is annexed. (See cut.) It is 1½ foot in length, and 8 inches



LOOM FOR RIBBONS USED IN NORWAY.

high; the ribbon is about 2 inches wide, and the comb of wood that presses up the woof has numerous teeth. As the bone combs under consideration have seldom more than ten teeth, some other system must have been employed than that in vogue in Norway. They may also have been employed in combing flax or wool. Two long combs of wood, somewhat similar but broader, supposed to be used in weaving, were found in a lake dwelling at Grands Roseaux, in the Lake of Paladru, Isère, said to be Carlovingian of the ninth century.^c It is to be observed that both at Björko and the broch of Burrian these long combs were found associated with side combs and double-tooth combs, showing that the people of the period possessed other and more suitable appliances for combing hair.

^a See a memoir by Mr. Joseph Anderson, *Notes on the Evidence of Spinning and Weaving in the Brochs or Pictish towers, &c.*, *Proceedings of the Society of Antiquaries of Scotland*, vol. ix. p. 548.

^b *Compte Rendu* of the seventh session of the International Congress of Prehistoric Archaeology, 1874, Stockholm, p. 625, fig. 12.

^c *Les Palafittes ou Constructions Lacustres du Lac de Paladru*, par M. Ernest Chantre, 1871, pl. xiii.

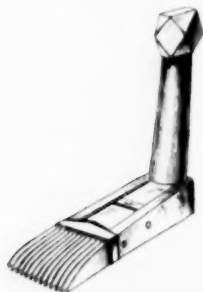


COMBS OF DEERHORN FROM GREENLAND.

Annexed are outlines of four deer-horn combs of like form from Greenland, in the Ethnographical Museum at Copenhagen; they have ten, eight, eight, and seven teeth respectively, and are said to be used for combing flax.

Combs somewhat similar but shorter and broader appear to have been in use during the bronze age, as, for example, one found in a pile dwelling in the district of Borgo San Donnino, in the province of Parma, which is figured in Keller's work, and which is also ornamented with the dot and circle pattern;^a others made of bronze are of the same date, and may possibly have been used in weaving.

It appears not improbable that long combs with teeth at the end may have been employed for combing hair before side combs were introduced. Combs from New Zealand and the South Sea Islands are of this kind, and examples from Moosseedorfsee, figured in Keller,^b as well as one, figured in Madsen, from Meilgaard, in Denmark,^c although the latter was found only on the surface of a kitchen-midden, and one found in Kent's Cavern, Torquay, show that they were used in the stone age, but of a form quite different and not liable to be mistaken for those now under consideration, which are products of the early iron age, and are associated in a special manner with pits found in camps, and with objects which Mr. Franks has attributed to the Late Celtic period.



COMB USED IN WEAVING, YARKAND.

It may be interesting to compare these combs with an instrument used in weaving in Yarkand, of which the original is in the India Museum, and is represented in the accompanying woodcut.

To resume now the account of my excavations. 1 foot 2 inches beneath the surface in Pit 2 was found the iron spud or celt (Plate XXIV. fig. 5). It is $5\frac{1}{2}$ inches long, and has a rounded and rather blunt edge 3 inches wide, and a socket formed by beating a flat plate of the iron over the shaft, leaving a space between the edges in the manner in use at the present time in Ireland in hafting the *loy* or spade in common use in that country. The rivet was at right angles to

^a Keller, *Swiss Lake Dwellings*, translated by J. F. Lee, p. 385, pl. cxi. cxv.

^b Keller, p. 38, pl. v.

^c Madsen, *Afbildinger*, Steenalderen, pl. 2. See also *Mémoires de la Société Royale des Antiquaires du Nord*, nouvelle série, 1873-4, p. 96.

the face of the blade. Such an instrument might have been used at any period of time, but we have evidence that it was employed in the early iron age; it is in fact the survival in iron of the bronze socket celt. Several were found in the lake dwelling at Marin,^a in the lake of Neuchâtel, a station known as the principal Swiss lake station of the iron age. They were there associated with the peculiar swords and other objects belonging to the Late Celtic period, also with Gaulish and Roman coins and fragments of Roman roofing tiles. Similar celts were also found at the iron age station of La Tène in the same lake.^b With the iron spud at the same level was also found a fragment of Roman tile $1\frac{1}{4}$ inch thick, a piece of flat pottery roughly rounded to $1\frac{1}{2}$ inch in diameter and pierced in the centre, probably to be used as a spindle-whorl (Plate XXV. fig. 55), and an oyster shell. As this was the only fragment of tile found in Mount Caburn it must probably have been imported for some other object than roofing. I have occasionally found elsewhere isolated fragments of Roman tile in connection with British remains, and the conviction grows upon me that they may have been used for colouring; the tile is soft, and when wetted serves the purpose of paint fairly well; the skin rubbed with it retains its colour for some time. These objects, from their proximity to the surface, however, need not necessarily be connected in point of time.

Lower down in the same pit, at 5 feet 4 inches from the surface, was found a shore pebble (Plate XXIV. fig. 20), ground on both faces and one end to receive a string, possibly to be used as a weight or perhaps as a hammer; three of the corners are much worn by hammering or friction of some kind, the fourth corner being rounded is not worn; for whatever purpose it may have been used, whether as a weight in weaving or as a hammer, it is evident that the corners only received the friction; it weighs 6 oz. and was the only one found. The animal remains from this and the other pits are mentioned elsewhere.

In Pit 3, after removing the usual débris consisting of mixed mould and chalk with animal bones and small fragments of pottery, there were found at the bottom a knife-handle of deer-horn, a small iron bar, a limpet shell apparently cut at the edges, and an iron bill. The knife-handle (Plate XXIV. fig. 25) is made of the tine of a deer-horn, which has been 5 inches in length, with a hole for the blade at the larger end and a cylindrical rivet-hole $\frac{1}{4}$ inch in diameter, very cleanly bored with a metal tool, at the distance of half an inch from the end. The half-inch band between it and the extremity is ornamented with the dot and circle pattern already alluded to, the circles being distributed in an irregular manner. Above

^a Keller, p. 420, pl. cxiii. figs. 22, 23.

^b Troyon, *Habitations Lacustres*, p. 191, pl. xiv. fig. 18.

this, on the line of the rivet hole, a quarter-inch band, the width of the hole, is marked by two lines edged with half circles of the same size as the others.

This dot and circle ornament has already been referred to in the case of the bone combs at Danbury, Spettisbury, Björko, Burrian, Borgo San Donnino, and elsewhere. A piece of deer-horn ornamented with this pattern, said to resemble the mouthpiece of a musical instrument, but possibly a knife-handle, was found in the camp on Worlebury, near Weston-super-Mare, in association with pits of the same character and pottery of the same description.^a A knife-handle exactly like the one under consideration, formed of the tine of a deer's horn and similarly ornamented, was found in a lake dwelling of the bronze age at Estavayer, and is figured in Keller.^b Ornamentation of the same character has been found in the bronze age station at Möringen,^c also at the bronze age station at Auvernier, which belongs to the "bel age du bronze," and where also was discovered the wattle of huts resembling that from this place hereafter spoken of. Similar ornamentation was used on the handles of some of the knives and on some of the pottery and other objects found at Hallstatt,^d a station belonging especially to the early iron age and the transition from bronze to iron. This ornament was in common use in the early iron age of Denmark.^e It was used in France as late as the Station des Grands Roseaux, already referred to,^f and in Yorkshire it has been found associated with relics of the Late Celtic type in the Settle Caves, where this Late Celtic style of ornamentation appears to have survived as late as the fifth century.^g It is also commonly found amongst Saxon and Frankish remains.^h This form, or rather the concentric circle pattern from which it is derived, is an ornament especially appertaining to Cyprus, and, as Mr. A. S. Murray truly observes in his remarks upon the pottery of that island, has been developed in the process of metal work.ⁱ It was in common use at Mycenæ.^k It was used also frequently but less commonly at Hissarlik,^l and it is not of uncommon occurrence

^a *Proceedings of the Somersetshire Archaeological Society*, vol. iii. p. 9.

^b Keller, second edition, p. 262, pl. xlv. fig. 6.

^c Keller, pl. xliii. fig. 6.

^d Ed. von Sacken, *Das Grabfeld von Hallstatt*, Taf. xix. 4, 5, 6.

^e *Denmark in the Early Iron Age*, by Conrad Engelhardt: Thorsbjerg, pl. 3, 4, 9, 10, 11; Nydam, pl. v. viii.

^f Ernest Chantre, *Les Palafittes du Lac de Paladru*, pl. v.

^g *Cave Hunting*, by W. Boyd Dawkins, F.R.S. p. 91.

^h Lindenschmit's *Alterthümer*, Heft. iv. Taf. 7, Heft. ix. Taf. 6, Heft. x. Taf. 7. Roach Smith, *Collectanea*, vol. ii. pl. xxxix.-xli. xlv.

ⁱ *Cyprus*, by General de Cesnola, pl. ii. and pp. 312, 397.

^k Schliemann, *Mycenæ*, pp. 229-264.

^l Schliemann, *Troy*, p. 235, pl. xlix.

in the Assyrian sculptures.^a The small circle or dot and circle, M. Oscar Montelius has observed, in a paper on the bronze swords of Scandinavia, read at the International Congress of 1874, is a survival found on the handles of swords of later date, transformed, as is usually the case with transitional forms of ornament, with a view to economy of time and labour, from the more elaborate concentric circles and spirals of the earlier period.^b It is an ornament which has a peculiar fascination for people who have not long enjoyed the use of a pair of compasses, as any man with a family of small children may have noticed. It is in fact a bastard survival of the great period of spiral ornaments, and consequently a form belonging to the later bronze period carried on into the early iron age of which we are speaking. That a simple ornament of this kind might be, and has been, used by divers people in various stages of culture, is a readily admitted fact, but such a fact does not diminish the importance of studying it in connection with the age in which it is more especially prevalent.

The iron bar (Plate XXIV. fig. 14) is $2\frac{1}{2}$ inches in length, half an inch in breadth, and one-third of an inch in thickness, weight 1 oz. 146 gr.; it is much corroded, and appears to have been very evenly wrought and cut off square at the ends. It may possibly have been a piece of iron prepared to be wrought into a knife. Iron bars of a particular shape, half formed to be worked into swords, have been found at various places connected with antiquities of the early iron age at Hod Hill, Spettisbury, and Meon Hill, in Gloucestershire, and at Tiefenau, near Berne, a station of the Late Celtic period.^c These, however, are in a more advanced stage of manufacture than the bar in question. It would appear not at all improbable that half-wrought implements of this kind may have been used as a kind of currency. Cæsar says that iron was rare in Britain even on the coast where it was worked, and his mention of iron rings of a certain weight^d proves that iron was used in addition to coins, which we know to have been also used as a medium of exchange. Bars of this form adapted to be wrought into implements, or implements half worked up, may have been used as money, as is now the case throughout Central Africa, where iron spades and hoes and bars of iron of a particular weight pass current over a wide area.^e

^a Layard, *Nineveh and its Remains*, vol. ii. pp. 137, 350, 369.

^b *Sur les poignées des épées en bronze*, Congrès International d'Anthropologie de 1874, p. 891.

^c *Horæ Ferales*, p. 177. Bonstetten, *Notice sur des armes et chariots de guerre découverts à Tiefenau*, 1852, pl. ii. iii. iv. *Archæologia*, vol. xlv. p. 263.

^d *De Bello Gallico*, v. c. 12.

^e *Artes Africanæ*, by Dr. G. Schweinfurth, pl. iv.

The iron bill (Plate XXIV. fig. 13) is 2 inches broad in the blade and 10 inches in length, including the socket, 4 in. long, formed by beating a flat plate of the iron over the shaft, like that of the iron celt already described; it has also an iron rivet exactly in the same position at right-angles to the face of the blade. Bills appear to have been amongst the earliest iron tools employed; they are found at Marin, the iron age station of the Swiss lakes already referred to,^a where however they are made with tangs to fit into the handle. Amongst the implements discovered in the intrenchments at Hod Hill, the implements from which place correspond very closely to those of Mount Caburn, a number of bill-hooks were found^b one of them, figured in Warne's *Ancient Dorset*, more curved than



IRON BILL-HOOKS.

1. Dunshauglin Crannoge, Derry, Ireland; Royal Irish Academy. 2. Museum of St. Germain. 3. Camp of Vauxroux; Museum at Chartres. 4. Lough Revel Crannoge, co. Antrim; Gen. A. Lane Fox. 5. Camp at Le Câtillon, Normandy.

the present specimen and approaching to a sickle shape, has an over-lapping socket like it. In the small pit since discovered in Cissbury by Mr. Park Harrison, which contained the bone comb to which I have alluded, and pottery ornamented with the same patterns as that of Mount Caburn, a small iron sickle, like that figured in Warne's *Ancient Dorset*, was found; it had also a socket formed in a similar manner. I have also in my collection an iron bill resembling this one, only with a small beak-like projection at the back; it had a socket similarly formed and a rivet-hole in exactly the same position. It was found in Lough Revel Crannoge, county Antrim, in July 1863, with iron swords and objects having the peculiar ornamentation recognized as Late Celtic, a style of ornamentation which survived in Ireland to a much later date than in the part of England which we are discussing. In 1851 a Committee, consisting of M. Charma, the Abbé Durand, and M. Mancel, discovered an iron bill of the same form in the

^a Keller, second edition, p. 421, pl. cxxiii. figs. 19, 20.

^b Warne, *Ancient Dorset*, p. 153, pl. iii. repeated from Roach Smith, *Collectanea*, vol. vi. p. 5, pl. iii. fig. 7.

camp called Le Câtillon, near Bénouville, 11 kilomètres from Caen.^a M. Troyon discovered a similar implement in a Helveto-Burgundian tomb, and others are said to have been found in the ruins of Pæstum. In the Museum of the Royal Irish Academy there are two with similar sockets and rivets, but without the beak-like projection at the back; they were found in Dunshaughlin Crannoge, co. Derry. Another bill of the same kind with a socket similarly formed, found in a Roman ruin at Nonfous, near Yverdon, is figured in Baron Bonstetten's work on Swiss antiquities.^b In the Paris Exhibition of 1878, two iron bills, having the beak-like projection at the back similar to the Lough Revel specimen, were exhibited by the Musée de St. Germain in association with iron adzes, having tubular sockets bent at right angles to the blades, resembling one found in the Caburn pits to be hereafter described.^c In the Museum at Chartres there is an iron bill with a similar socket and a similar beak-like projection at the back, found in a camp said to be Gallo-Roman, called Vauxroux, near there: and here also it is associated with an iron axe, having the tubular socket at right angles. We perceive, therefore, that iron weapons of the above-mentioned construction are associated together in the south of England and the north of France, but from inquiries made recently in Scandinavia I find that they are not found in connection with the iron age of Denmark or Sweden; there are none such in the Museums of Copenhagen, Kiel, or Stockholm, and none like them are figured in Dr. Engelhardt's work. It will be observed that the blade of the Mount Caburn specimen is bent; it was therefore probably a disused and imperfect specimen when thrown into the pit, a point which has some bearing on the object for which the pits were constructed.

At the bottom of this pit was also discovered, near the bill, part of a globular vase of coarse material, mixed with fragments of shell or silex. It had been 4½ inches in diameter at the mouth, with a projecting rim and slightly swelling out below. If we are to consider all the contents of a pit found at nearly the same level to be contemporaneous, this would tend to prove that the coarse pottery with large white grains is not earlier than that of finer texture, numerous fragments

^a *Compte Rendu* read to the Société des Antiquaires de Normandie by M. A. Charma in 1851. *Mémoires de la Société des Antiquaires de Normandie*, vol. xix. p. 485.

^b *Recueil d'Antiquités Suisses*, pl. xiv. fig. 8.

^c Two other bills, very similar in form to that from the museum at St. Germain (No. 2), are in the museum at Rouen, and were found by the Abbé Cochet in excavations at Douvrend and Nesle-Hodeng; they measure respectively 1 foot and 1 foot 1 inch.

of which were also found at the bottom of the pit mixed with the other. Some of these fragments when put together showed that they belonged to a pot of the shape of a sauce-pan without the handle, $6\frac{3}{4}$ inches in diameter at the bottom, $8\frac{1}{2}$ inches at top, and $5\frac{1}{2}$ inches high, having a slightly projecting rim and quite plain. (Plate XXV. fig. 56.)

No. 4 contained nothing in particular, except a flint strike-a-light, much used, and some fragments of pottery. The bottom was puddled with clay, but only in the centre for a space of 2 feet square. In this pit was found a fragment of pottery ornamented with large squares of $1\frac{1}{2}$ inch, touching at the corners, and defined by quarter-inch bands filled with oblique cross-lines (Plate XXV. fig. 39).

In No. 5 were found some fragments of black smooth pottery, ornamented with grooves one-tenth of an inch broad in curved lines and bands, with a line of dots punched in the centre (Plate XXV. fig. 32); other fragments were of a red coarser kind, ornamented with bands of oblique parallel scratches. I have not been able to determine the character of the ornamentation from the few fragments discovered. Mr. Franks claims it as Late Celtic. This pit also contained part of the lower part of a flat-bottomed vase, $4\frac{1}{16}$ inches in diameter, of smooth brown texture, and two flint-flakes near the top. There were no implements in this pit, but bones and pottery all through.

Pit 6 contained a little pottery at top, but the filling consisted of white chalk rubble, which contained no bones or pottery; some of the flints in the chalk rubble had black fractures, showing that they had not been exposed to the air for any length of time after being broken; experience on this point has been obtained from the Cissbury excavations.

We next examined the oblong and circular pits, which from being so close together I have named the twin pit. The space between them was 2 feet 6 inches, divided by a low ridge of the undisturbed chalk, but whether they were connected originally, or whether their proximity arose from one having been filled up before the other was excavated, we have no means of determining. No communication between them could be traced. The sides were very evenly cut, and they were both of the same depth, and shallower than the others, which is in favour of their being in some way connected. In the oblong pit were found two pieces of smooth brown pottery with curved grooves, similar to those found in pit 5, but broader, and in one the groove is edged with a line on each side similar to Plate XXV. figs. 32, 36, 40, and at the bottom, in a corner, an iron knife (Plate XXIV. fig. 6), 4 inches long in the blade and $1\frac{1}{4}$ inch in the broadest part; the blade is curved back. A precisely similar knife was found in a Roman

villa at Hartlip in Kent; ^a another of nearly the same form but considerably larger, being 9½ inches long and having in that case a socket formed exactly in the same manner as that of the bill and celt above mentioned, was found with a Roman urn of Castor ware at Lincoln in 1855. ^b Others with a tang like this one were found in the intrenchment at Hod Hill, in Dorsetshire, above mentioned, a camp certainly constructed by the Britons, and occupied by the Romans not later than the time of Trajan, ^c and they have been frequently found with Roman remains in London.

In Pit 7 the surface-mould appeared to extend rather deeper than usual, and just below it, at 2 feet 8 inches from the surface, on the level at which the chalk sides of the pit began to be seen, was found the iron hammer figured in Plate XXIV. fig. 1. The hammer is 2 inches in length, and has a round section enlarging toward the point of percussion; it has a cylindrical socket 1 inch in diameter (interior measurement) and 3 inches long, at right angles to the hammer-head, and having an opening at the top and on the side opposite the hammer. Hammers appear to be somewhat rare objects amongst the relics of any period except the stone age. At a later period we may perhaps assume that they were too closely connected with the smith's forge to be wasted and thrown away when damaged, and that on this account they were generally either melted up or reforged. An iron hammer was found in a deep narrow shaft at Ewell, in Surrey, by Dr. H. W. Diamond, F.S.A., in connection with Samian ware and other relics of the Roman age, and also in connection with flint balls artificially trimmed, but no illustration is given. ^d The tubular socket of the present specimen, which as above stated is at right angles with the head, enables us to compare it with other implements of like form. Axes having this peculiarity of make are seen in bronze specimens from Hallstatt, a station belonging to the transition from bronze to iron. ^e The celts and hammers of the bronze age were formed with the socket or other appliance for hafting in the same line as the blade, and were hafted on a bent wooden handle; but towards the close of the bronze age and commencement of the iron age the socket was sometimes bent at right angles, so as to adapt it to be hafted on a straight stick. Of course this object might have been accomplished readily by casting the hammer or axe-head of a solid mass with a hole in it, as is so commonly the case in our own time; but

^a Roach Smith, *Collectanea*, vol. ii. pl. vii. fig. 6.

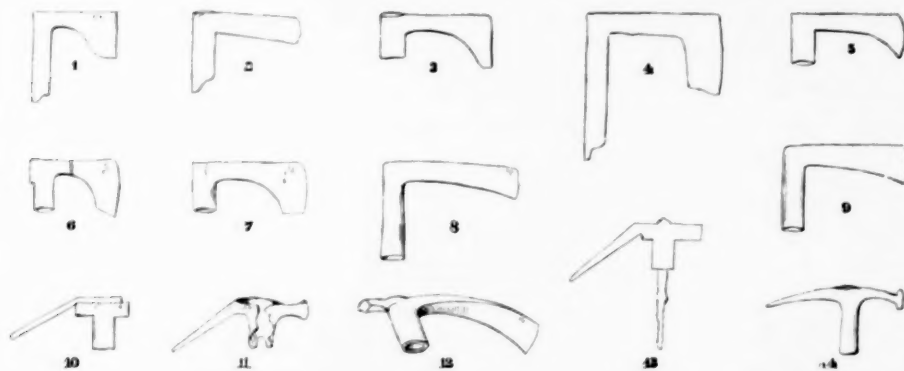
^b *Archæological Journal*, vol. xiii. p. 174.

^c Roach Smith, *Collectanea*, vol. vi. pp. 7-9.

^d *Archæologia*, vol. xxxii. p. 452.

^e *Grabfeld von Hallstatt*, by Ed. von Sacken, taf. viii. figs. 1 and 2.

the continuity of ideas to which archæology is so much indebted for the means of tracing the succession of forms, appears to have debarred the use of this simple expedient in the first instance. The socket having been formed in the same line as the blade during the bronze age, the next step, when the casting process became further perfected, was to form a bent socket or a socket at right angles, and in this form the axe and hammer passed into the iron period in the region under consideration. This kind of socket continued until Roman times. I have already, when speaking of the iron bill found in Caburn, given one or two instances of the occurrence of this tubular socket at right angles in association with such bills, in the Musée de Saint Germain, and in the camp at Vauxroux, near Chartres. In the museum at Hamburg there is an iron axe with the same kind



IRON AXES.

1-4. In the Upsala Museum, said to date about A.D. 1000. 5, 6. Wurtemberg, Hamburg Museum. 7. Mezingen, Wurtemberg. 8. Camp at Vauxroux, Museum of Chartres. 9. Camp of Artois Huelgoat, General Lane Fox's Collection. 10. Musée de St. Germain. 11. Kingsholm, near Gloucester, British Museum. 12. Saumur Museum, said to be Roman. 13. Jordan Hill, near Weymouth, General Lane Fox's Collection. 14. Pakenham, Norfolk, British Museum.

of socket found with other iron implements, including some bills with tangs, in Wurtemberg in graves; and in my collection there is a similar iron axe presented to me by Mr. J. W. Lukis, who found it in an ancient well in the Camp d'Artois, or Arthur, at Huelgoat, in Brittany, a camp in all respects similar to those of ancient British construction in this country. It will be seen that the Mount Caburn specimen has an aperture on the side opposite the hammer, and although this aperture is symmetrical on the two sides which gives it the appearance, in its present rusty condition, of being an intentional opening, there can be little doubt, I think, from a comparison of like forms, that it marks the place where an axe or an adze-blade has been broken off. Adzes of this kind with a tubular socket and

a hammer at the back are not unfrequent in connection with Roman remains, of which several examples are here given in outline. One in the British Museum exactly resembling this one, assuming it to have had originally an adze-blade, was found at Pakenham with Roman pottery; another in the same museum, found at Kingsholm, Gloucester, was also found with Roman remains; it is figured in Lysons' *Reliquiæ Britannico-Romanæ* (vol. ii. pl. xi. fig. 1); a third, also associated with Roman remains, is in my collection, having been found by Mr. Medhurst at Jordan Hill; a fourth, is the one in the Musée de Saint Germain; a fifth, also said to be Roman, is in the Saumur Museum, and is figured in Roach Smith's *Collectanea*; it is in fact the carpenter's adze so often sculptured on the Roman tombs, examples of which are seen in *Les Arts et Métiers*, by Grivaud de la Vincelle,^a in Roach Smith's *Collectanea*,^b and elsewhere. I cannot ascertain that this form of tubular socket was in use in Scandinavia in connection with the early iron age, but at a period subsequent to the Roman era it appears to have been introduced. In the museum at Upsala there are four with sockets similarly formed, which are believed to date about A.D. 1000. Close to the hammer in the Mount Caburn pit were found several pieces of pottery of the finer description, and six inches below it a small bone object, the use of which I have not been able to ascertain, unless it is a stilus (Plate XXIV., fig. 30); it is 2 inches in length, with a gradually tapering shaft, flattened and enlarged at one end, having a rim at the other. A fragment of another apparently similar was found a few inches below it. This pit contained a piece of pyrites of peculiar shape, one of several found in the pits, and evidently imported for some purpose, two mussel shells (the only ones found), quantities of animal bones, and some shore pebbles. Pit 8 contained nothing worth noticing here.

Pit 9 was very prolific: after clearing out a quantity of dark mould, mixed with small fragments of pottery of the usual kind, we found at the bottom a knife-handle of deer-horn, 5 inches long, with a branching end, and an oval hole for suspension (Plate XXIV. fig. 31). This hole appears to have been formed by drilling two circular holes side by side at the junction of the two branches of the horn, uniting them with a clean cut; the end which contained the blade is slightly enlarged at the edge, and had a slit for the blade one-eighth of an inch wide, and $1\frac{1}{4}$ inch long, but no rivet-hole. It was commonly the custom during the bronze age to suspend the knife from a ring at the end of the handle, examples of which from Möringen and Auvernier are given in Keller and Lindenschmit, and instruments

^a *Arts et Métiers des Anciens*, par Grivaud de la Vincelle, pl. cxxx.

^b Roach Smith, *Collectanea*, vol. v. p. 44.

for hanging them to have also been found.* The same practice probably continued amongst the Saxons, and it has been suggested, from the position of the knives in the graves, that they may sometimes have been suspended from the neck,^b like those of the Basutos of South Africa. A bronze ring, $1\frac{1}{4}$ inch exterior diameter, and $1\frac{1}{4}$ inch thick (Plate XXIV. fig. 19); a fragment of the edge of a bronze blade (Plate XXIV. fig. 18), $1\frac{3}{4}$ inch in length, broken off apparently from a bronze sword or dagger; it has a shallow groove at the back, along which it appears to have been fractured. The other objects consisted of a plain horn knife-handle 3 inches long, a sandstone burnisher about 1 inch square and $2\frac{1}{4}$ inches in length, three shore pebbles, two balls of pyrites, and a small globular vase of coarse quality but without grains of silex (Plate XXV. fig. 34), 2 inches in diameter and $1\frac{1}{4}$ inch high—all the pieces of this were found and it has been restored; also a pot similar to that found in Pit 3 which has been restored and is represented in Plate XXV. fig. 44.

The discovery of a fragment of a bronze blade in this pit is of interest. It is possible it may have been the edge of a spear-head, but the line of fracture along the groove leads me to think it may be a piece of a bronze sword, broken perhaps in a contest with some enemy. Grooves of this kind often run along the edges of bronze swords, and afford naturally a point of weakness. There is also a slight dent in the edge of the blade on one side as if it had been struck by a hard blow; this would indicate a period of transition from bronze to iron, but the evidence is perhaps not strong enough to found any reliable theory upon.

There is nothing in the form of the pit to lead to the supposition that it was of a different date to the others, but it will be seen in the plan that it is slightly removed from the nearest cluster, and this circumstance, assuming the pits to have been connected with habitations, may perhaps favour the opinion that it was part of the residence of a superior officer. The bronze ring is of the kind known as armour rings, and frequently found amongst relics of the Late Celtic period. They are especially prevalent amongst antiquities found in Ireland. Pits 10 and 11 contained nothing of consequence.

We now commenced the examination of the large pit. Clearing out the mould until the solid chalk was reached we found that the basin, 35 feet in diameter, had been originally constructed in this form. On the west side a drain, 1 foot wide and 10 inches deep, led into it, but from whence and for what object

* Keller, pp. 155, 163, 241, pl. xli. l. li. Lindenschmit, Heft. viii. Taf. 4. Klemm, *Werkzeuge und Waffen*, pp. 133-5.

^b Hume, *Antiquities of Cheshire Coast*, p. 181. *Archæologia*, vol. xxxiv. p. 79; vol. xxxviii. p. 88.

we have not as yet been able to determine, not having followed the drain along the surface. At the bottom of the basin in the centre we found a shaft 12 feet in diameter at top and 11 feet in depth from the bottom of the basin, funnel-shaped, narrowing to 7 feet 6 inches in diameter at 4 feet below the basin, and diminishing to 5 feet 3 inches at the bottom; it was an irregular circle, the sides and bottom jagged and untrimmed.

In the mould of the basin, above the shaft, we found the remains of the same domesticated animals as in the small pits, viz., pig and ox, with the addition of the leg and spur of a fighting-cock; and the scapula of a rabbit, oyster shells, and the large *Helix aspersa* were found in the mould of the basin, and to a depth of 2 feet 4 inches in the shaft, but no lower. The soil was mixed with mould to a depth of 3 feet in the shaft, and below that there was pure white chalk filling down to the bottom, without the slightest trace of mould, the fragments of chalk averaging 2 to 8 inches, but quite at the bottom there were larger blocks 1 to 1½ foot across.

All the fractures of the flints found in the rubble as well as those found *in situ* on the sides of the shaft were black and unbleached; it appears therefore quite certain that this pit, like some of the smaller ones already described, was filled up shortly after being excavated and before the excavated chalk had become mixed with mould on the surface, or the broken flints exposed for any length of time to the atmosphere. The chalk had been thrown up on the north side where the remains of the mound still remains, and it had been refilled from that side, which was proved by the large blocks at the bottom being on the south side of the shaft, and by the north side of the shaft being coated all down with fine chalk silt. As we ourselves refilled the shaft again from this side, we had a good opportunity of observing the process; the large blocks of course fall over to the opposite side to that from which they were thrown, whilst a fine chalk powder dribbles down the near side of the shaft and forms a compact bedding of soft silt all up that side, just as we found it when we excavated the rubble. There is a horizontal seam of flints *in situ*, at from 3 to 4 feet from the bottom all round; of these we counted 27, all of them, as well as those found in the rubble, being of small size.

The remains of human industry in the basin above consisted of British pottery of the same kind as that found in the pits, with the exception of the coarsest, and one piece of Roman pottery, the only piece found as yet in any part of Mount Caburn. Nothing whatever was found in the filling of the shafts until we came to the bottom, where we turned up a small piece of British pottery, smooth and

without grains of silex, but not of the finest quality, being a piece of the bottom of a vase, and a large iron clinker in which charcoal could be distinctly traced, also part of the bone of a dog as identified by Professor Rolleston. All the pottery found in the pit, with the exception of one piece of Roman at top and one piece of a soft smooth kind at the bottom, was of the medium quality.

The iron clinker effectually disposes of the idea that the shaft might have been sunk for the purpose of obtaining flints for implements during the stone age or bronze age, which the finding of the seam of flints at the bottom might otherwise have appeared to favour. Nor was there a single flint-flake or core found in the shaft, nor could any marks on the sides be found to indicate occupation by man.

This appears to be the proper place to consider the evidence obtainable from different sources on the subject of pits. We have to deal with the two kinds of pits discovered in Mount Caburn, the deep shaft and the smaller pits, both of which have been repeatedly found elsewhere, and chiefly in connection with remains of the Roman age.

At Cadbury Castle, near Tiverton in Devon, Mr. George Fursdon excavated a shaft which was marked on the surface by a deep depression in the centre of the camp; it was found to be a shaft 8 feet in diameter at the top and 3 feet at the bottom, 58 feet in depth; it was puddled with clay and filled up with rubble, no spring rises on the hill, and if intended to contain water could only have been formed to catch rain-water; at 25 feet fragments of pottery of three kinds were found, black and brown, some coarse and badly baked, and others harder with a pattern of network on it, together with bronze armillæ and rings, and an iron weapon. Mr. C. Tucker, who describes it in the *Archæological Journal*,^a thinks that some of the pottery contained in the filling may have come from a tumulus close by which had been used to fill up the shaft. Some of the objects appeared to be of the Roman age but the camp is undoubtedly of British origin. Similar shafts, containing Roman remains and believed to be rubbish-holes, were found by Mr. Trollope in the neighbourhood of East Gate, Lincoln, a site abounding in vestiges of the Roman age.^b Pennant mentions six shafts in a line at 10 feet apart and 18 feet deep on the site of the ancient *Bertha* (Perth), where the Romans had a station; they contained urns, and were believed to be sepulchral.^c Five or six shafts were discovered on the slope of a hill near Ewell by Dr. Hugh Welch

^a *Archæological Journal*, vol. v. pp. 193-8.

^b *Ibid.* vol. v. p. 197; vol. xix. p. 171.

^c *Ibid.* vol. v. p. 197. Pennant, *Tour in Scotland*, vol. iii. p. 109

Diamond, and described in the *Archæologia*;^a they were from 12 to 35 feet deep, and from 2 feet 2 inches to 4 feet in diameter, filled entirely with Roman remains, including quantities of Samian ware, all broken, and some having the potter's mark, an iron hammer, and rounded flint balls; they were considered to be sepulchral, having evident traces of human remains which had been burnt; a number of them were so close together that it was observed one aperture might have sufficed for the whole of them. In 1843 Mr. Medhurst discovered the remains of a Roman temple on Jordan Hill near Weymouth. It consisted of a peristyle, and was supposed to be a temple of Æsculapius. In the south corner was a dry well, 14 feet deep, that had been filled up in a very curious manner; it was daubed all round with a lining of clay, in which were set edgewise (like Dutch tiles round a fireplace) a layer of old stone tiles, which from their peg holes appeared to have been used or prepared for use on roofs of houses. At the bottom of the well, on a substratum of clay, was a kind of cist formed by two oblong stones, and in this cist two small Roman urns were found, with a broadsword, an iron spear-head, knife, and an iron handle of a bucket. Just above the cist was a stratum of stone tiles like those at the sides of the well, and upon it a bed of ashes and charcoal; above the ashes was a double layer of stone tiles arranged in pairs, and between each pair was the skeleton of a bird with one small Roman coin, then another bed of ashes. Similar beds of ashes, alternating with double tiers of tiles, each pair of which enclosed the skeleton of one bird and one copper coin, were repeated sixteen times between the top and bottom of the well, and halfway down was another cist containing a sword and other iron implements like those at the bottom. Dr. Buckland believed that this well contained the votive offerings of invalids and Roman families who visited the neighbourhood for bathing and for health.^b Of the coins only one of Theodosius could be identified. In 1846 a series of pits were found near the village of Newstead, Roxburghshire, filled with black earth and containing the bones of animals, broken amphoræ, Samian ware, a long iron spear, and other works of Roman art.^c A shallow one, found by myself in 1868 near St. Peter's, Broadstairs, contained Roman pottery mixed with flint flakes in considerable numbers, a flint implement, and the remains of domesticated animals.^d Another was found at Stone, in Buckinghamshire, in 1850, by Mr. G. D. Brandon, which Mr. Akerman considered to

^a *Archæologia*, vol. xxxii. pp. 451-55.

^b *Gentleman's Magazine*, 1814, vol. xxi. p. 185; vol. xxii. p. 635.

^c *Prehistoric Annals of Scotland*, second edition, vol. i. p. 290.

^d *Journal of the Ethnological Society of London*, new series, vol. i. p. 1.

be sepulchral.^a Shafts of this kind have been found in London,^b at Springhead, near Gravesend, at Tilbury, Faversham, Crayford, and Dartford. Others found at the Roman station at Richborough contained no sepulchral remains.^c The largest discovery of shafts of this kind was made at Chesterford, where the Honourable R. C. Neville opened as many as forty of them without arriving at any decided opinion as to their uses. Here, as at Ewell, some of them were found in clusters of three or four together, and in one place as many as fifteen were found within the space of half an acre. In more than one shaft pieces of the same pot were found at different depths in the same shaft, some pieces near the top and others near the bottom, and in one, a shallow one, only six feet in depth, ninety-six iron tools were discovered, consisting of anvils, hammers, axes, chains, scythes, &c., all considered by Mr. Neville to be of the Roman period, and in a perfect state of preservation, special care having evidently been taken to preserve them by means of a layer of chalk spread over the pit. Some of the shafts were filled with pottery, oyster shells, and animal remains, whilst others were destitute of such remains and filled only with earth.^d

In regard to the uses of these deep shafts no decided opinion appears to have been come to by any of the explorers. Mr. Neville appears inclined to regard them, perhaps as graves, perhaps as *favissæ*, formed to receive objects connected with sacred rites which had become unfit for use. Mr. T. Wright considered them to be *cloacæ*, which had become common depositories for refuse of every description. Mr. Akerman pronounced them to be sepulchral, and believed them to be the *puticuli* or depositories for the ashes of the humblest class of Romans. Burial in shafts was not unknown in ancient times. We have the account by Dr. McPherson of burials at Kertch in shafts, one of which was 52 feet in depth, and which dated about 500 B.C.;^e and Mr. Akerman mentions in support of his views a columbarium discovered on the Aventine Hill, in 1692, having a shaft 51 feet deep, with a sepulchral vault at the bottom.^f But few, if any, discoveries of this nature appear to have been made on the continent,^g and it appears unlikely the Romans should, unless led to it by finding suitable structures ready made for such purposes, have adopted in Britain a mode of interment that was not practised by

^a *Archæological Journal*, vol. viii. p. 95. *Archæologia*, vol. xxxiv. p. 21.

^b *Archæological Journal*, vol. xii. p. 126. ^c *The Celt, Roman, and Saxon*, by T. Wright, p. 179.

^d *Archæological Journal*, vol. xii. p. 111; vol. xiii. p. 1, pl. i. ii. and iii.

^e *Antiquities of Kertch*, by J. Duncan McPherson, 1857.

^f *Archæologia*, vol. xxxiv. p. 21.

^g Editor's note, *Archæological Journal*, vol. xii. p. 126.

them abroad. That they were used occasionally for this purpose appears evident from the facts adduced, but we have no proof that they may not have been originally constructed for some totally different object in earlier times. The filling need not of necessity be regarded as being of the same age as the shafts.

Putting aside the deep shafts and galleries, such as those of Cissbury and Grimes Graves, sunk for obtaining flints during the stone age, which are clearly inapplicable to the present case, as well as those sunk for obtaining the fine chalk called *argentaria*, mentioned by Pliny^a as having been made in Britain sometimes to the depth of 100 feet, with galleries at the bottom, which cannot possibly refer to the Mount Caburn shaft, because the whole of the chalk was put back again shortly after it had been excavated, we have evidence that such pits as these were in common use in all parts of the world for storing grain and other commodities, and that not unfrequently they were employed for concealment. Not to mention the Komera pits made by the New Zealanders of pre-historic times in and about their camps for this purpose, which however refer to a phase of civilization very closely allied to that of the ancient Britons, barring the use of metal tools by the latter,^b we find that such structures have been employed as repositories for grains in North Africa, Syria, Hungary, Media, and many other parts of the world.^c Tacitus speaks of the construction of them by the Germans, and Diodorus Siculus by the Britons;^d and similar pits, known as ancient hiding-holes, have been used by the inhabitants of Islay until very recent times. Since this paper was read Mr. H. C. Coote, F.S.A., has published his valuable work on the Romans of Britain. He mentions several more pits of somewhat similar construction. In Biddenham Field, about two miles from Bedford, about 100 yards from a Roman road, a shaft was discovered of some depth; it was filled with Roman pottery, Roman sculpture, an altar slab, leather soles, stone whorls, and pebbles. At Ipsden, in Oxfordshire, another was found, depth not estimated; its mouth was very narrow, and the sides of rough-ribbed chalk, logs of wood and steps about the size of a lady's stirrup were found in it, but it is not stated that anything of Roman origin was discovered. At Wellington, in Northamptonshire, a pit was found containing several Roman *ollæ* with

^a *Nat. Hist.* lib. xvii. cap. 8. Roach Smith, *Collectanea*, vol. vi. p. 246.

^b *Old New Zealand*, by a Pakeha Maori, p. 154.

^c See King's *Munimenta Antiqua*, vol. i. 1799, for an excellent treatise on this subject. In the island of Malta I have myself found these subterranean grain repositories of such size that on one occasion I caused one of them to be fitted up as a theatre for the soldiers.

^d *Diodorus Siculus*, lib. v. 209. *Munimenta Antiqua*, vol. i. p. 48.

bones of deer, but the dimensions are not given. At Ashill, in Norfolk, three were found close to each other; two of them contained unbroken *ollæ*, one was 8 feet deep, and contained an oaken chest; one of the others was 40 feet deep, it was lined with a framework of oak, and contained numerous Roman antiquities. Mr. Coote considers all these to be *arcæ finales*, the terminal marks made by the *agrimensores* in parcelling out the land, and he brings much research and knowledge of the Roman law to bear upon the elucidation of his opinion. That some of them were constructed for this purpose he appears almost to have proved; but I can hardly go with him to the extent of believing that all were excavated for this use only, or that such a pit as that found at Jordan Hill was a terminal mark, the contents of which appear to show that they must have been connected with some religious observances, nor does it appear evident to me why pits intended only to serve in identifying a mark on the surface should have been sunk to such a great depth as some of them are. If the Caburn pit was an *arca finalis* it must probably have been made after the camp was abandoned by the Britons. The fact of the only piece of Samian pottery found in the camp having been discovered in the basin above the pit might favour this view, and the circumstance of the pit having been filled up again shortly after it was excavated is in favour of its being a terminal mark; but if this were the case it is singular that nothing but one iron clinker should have been found in the shaft at the bottom and one small fragment of coarse pottery, British and not Roman.

The small pits found at Mount Caburn may possibly have been used for the same purpose as the large one, or as cellars to habitations erected upon the surface. That they were not themselves used as dwelling-places is evident from their small size. Their position makes it improbable that they were latrines, and the analysis of the contents of the earth by Mr. Robb affords no sufficient ground for such a supposition; nor could they by any possibility have been made for graves, because quantities of animal bones were found in the greater part of them, in good preservation, but no trace of human bones burnt or unburnt. It is true that at Hardham in West Surrey, Professor Boyd Dawkins discovered small pits of nearly the same size, but deeper, in which evidence of Roman interments by cremation were found,^a but at a place called Bathurst Wood, near Battle, Professor Dawkins in 1862 discovered other pits in all respect similar to the Mount Caburn one, which had been sunk by the Britons to obtain iron ore.^b Not only were pits constructed for different purposes in British times, but the filling of them at a subsequent

^a *Sussex Archaeological Collections*, vol. xvi. p. 52.

^b *Transactions of the International Congress of Prehistoric Archaeology*, third session, 1868, p. 185.

period may have taken place under different conditions. We have evidence that in some cases the pits and shafts were filled with rubble only, and contained no relics whatever; in other cases they have been filled with broken pottery and rubbish, whilst in some few, as at Chesterford, distinct hoards of implements have been found, and at Worlebury, near Weston-super-Mare, deposits of grain have been discovered.* Hoards of treasures or valuables would be hidden in time of war. In the peace which followed, such as that which succeeded the Roman conquest, the hoards would either be exhumed by the people who buried them, or rifled by the conquerors, and the pits would then be filled up again with the materials at hand, sometimes they would be filled with earth alone, and sometimes with refuse, hence the variety of the filling noticed. In either case we can understand how they might sometimes come to be filled up again and abandoned very soon after they were made, as our evidence at Mount Caburn shows was the case with some. Sometimes they might be utilised as graves, as Mr. Akerman supposes the *puticuli* to have been, for the ashes of the humblest class. Only on rare occasions the deposits would be forgotten, or the sites lost, or the owners perhaps killed, and they would then remain to our own times. The discovery of several of the deeper shafts in clusters both at Ewell and Chesterford is in favour of their having been used to conceal stores. Such an arrangement would facilitate their being found again by the people who made them after the apprehended danger had passed away. In places where beehive huts, having been made of stone, have survived on the surface, shafts and underground structures have been found in connection with them,—as at old Chysoister, near Penzance,^b and Gulval in the same neighbourhood,^c and in many of the raths and other prehistoric habitations in Ireland which I have myself examined. We may reasonably assume, therefore, that the Mount Caburn small pits and others resembling them may originally have been connected with similar habitations of reeds or wattle-work on the surface, which have disappeared. The large shaft at Mount Caburn adds but little to our knowledge of such structures beyond this, that it is an exceptional example of one in a place in which no traces of Roman occupation have been discovered, if we except one small fragment of Roman pottery found in the basin above, the only piece found in Mount Caburn during the first examination, and not necessarily con-

^a *Visitor's Handbook to Weston-super-Mare*, by L. E. H. J. superintended by the Rev. W. Jackson. *Proceedings of the Somersetshire Archaeological Society*, vol. ii. p. 64.

^b *Archæologia Cambrensis*, vol. iv. third series, p. 72.

^c *Archæological Journal*, vol. xviii. p. 42. See also a paper by Mr. W. C. Borlase, *Ibid.* vol. xxx. p. 336.

nected in any way with the shaft itself. The shaft might therefore be of pre-Roman origin in so far as no evidence to the contrary has been obtained by me. As to the drain leading into it, this need not necessarily be associated with the period of its construction, inasmuch as no puddling to contain water was found, and it may therefore have been made to drain into the basin at some more recent time, after the shaft had been filled up.

After this I began cutting a section across the two ramparts and ditches on the north-west side, selecting a spot where the rampart appeared to be best preserved. (See section A, C, D, on plan, Plate XXIII.) A trench 14 feet wide was first cut across the upper rampart, reaching down to the undisturbed chalk and laying bare the original line of the hill, which was marked by a dark line representing the old surface mould and turf. This old surface we found to have been strewn with animal bones and broken pottery in small pieces. The bones were those of domesticated animals—ox and pig—the same as had been found in the pits. The pottery under the interior slope of the ramparts was mixed, containing a good deal of the finer quality found in the pits, mixed with a coarser kind; but when we got into the body of the rampart it was found that the whole of the fragments were of the inferior kind, that is, soft, pasty, and badly baked, such as by some persons would be called unbaked, and mixed with large grains of silex. Reference to the pottery table will shew that in the body of the rampart 97 per cent., that is, all except two small bits, which might have come down from the top in digging, was of this inferior kind, whereas under the interior slope 7 per cent. of the fragments were of the finest quality and 18 per cent. of the medium kind. This may be accounted for by the *débris* of the pottery used in the interior of the camp, subsequently to the erection of the rampart, having been washed down owing to the fall of the ground and accumulated at the foot of the interior slope, and as the rampart underwent the process of degradation by time, this pottery would be covered over by the talus from the rampart, which ultimately stood at a much lower angle than it did at first; thus the soil beneath the interior slope would be mixed with fragments of a much more recent date than those lying on the old surface beneath the body of the rampart, all of which latter must have been there before the rampart was formed, and must therefore be taken to represent the kind of pottery in use at that time.

The argument that I base upon this is that the inferior kind of pottery, although found mixed with the superior quality in the pits, as already mentioned when describing the excavation of the pits, was older than it, that the upper rampart was also older, and was erected before the superior kind of pottery was

introduced into the camp. Mr. Hilton Price, who was present at the time of this discovery, confirms me in this observation; we shall see how this agrees with what follows.

Digging on now towards the ditch we found near the outside of the rampart two holes in the undisturbed chalk, 2 feet in diameter and 2 feet deep, in the position marked upon the plan and section; they were filled with fine chalk rubble and a little mould, and contained the remains of carbonised wood; evidently they had been made to receive the stakes which supported the vallum on the rampart; a smaller hole one foot deep was afterwards found near one of them. I caused trenches to be dug right and left to see if a continuation of the stake-holes could be found, but only found two or three small holes to the west in the same line as the others; the chalk, however, appeared to have been disturbed. The position of these stake-holes will be referred to subsequently when considering the restoration of the rampart; they were 2 feet deep beneath the chalk surface, and must have been nearly 3 feet beneath the old surface line. It is to be observed that no oyster shells were found in the rampart and only six flint flakes.

The ditch of the upper rampart was found to be 4 feet 7 inches deep, beneath the present surface line, and we excavated it in spits from the top in order to distinguish the remains found at the different levels. The surface mould, without stones, was 6 inches deep in the centre, thinning to 3 inches on the sides; below this came mixed surface rubble, making together with the surface mould 1 foot 6 inches, and beneath that chalk rubble, not white as in some pits but mixed with mould, the result of silting, very compact and hard. The upper spit contained pottery of the three kinds hitherto found, viz. the smooth, the medium, and the coarsest, the medium quality being the most abundant, and ten flint chips, with bones of pig, sheep, and ox. The second spit, extending to 2 feet 6 inches from the top, contained two pieces of pottery, several oyster shells, and *Helix aspersa*. The third spit from 2 feet 6 inches to the bottom, which was at 4 feet 7 inches, contained no oyster shells nor *Helix aspersa*, but quantities of *Helix nemoralis*, also two pieces of the coarsest kind of pottery. In all, thirteen flint-flakes were found in this ditch.

The absence of oysters again at the bottom of the ditch, and the presence of *Helix nemoralis*, a shell not now found on the downs at this height, is noticeable, coupled with the absence of oysters in the upper rampart; it implies an earlier date than the Roman period, and a difference in the surroundings, when the hills were probably more wooded than they are at present. What little pottery was found in the bottom of the ditch also confirms this opinion, so far as it goes.

Three shore pebbles were found in the ditch, probably used as sling stones, as has been conjectured in the case of former similar discoveries elsewhere.

The ditch has a flat bottom, one foot wide, just sufficient to enable a row of men to stand abreast, and a rather high step in the counterscarp to enable them to sally out or ascend the second rampart. I may here mention that the outer ditch was found to have similar means of egress in the counterscarp, showing that they employed sorties as a mode of aggression. The escarp of the upper ditch rose at an angle of 45° . This mode of construction differs from the ditch at Seaford, which was 3 feet wide at the bottom,^a and that of Cissbury, which was about 10 feet at the bottom and had a ridge of solid chalk left in the centre.^b

In cutting through the second rampart the section was at first reduced to 7 feet 4 inches in width to save labour, but afterwards increased, following along the line of the old surface, which descended gently towards the north as before; the line of the old turf was marked by a dark seam as in the upper rampart, and the surface above this was strewn with fragments of pottery, but of a totally different character from that of the upper rampart, corresponding for the most part to that of the medium quality found in the pits, a little coarser perhaps, but much less coarse than that of the upper rampart, having no large grains of silex in its composition and being better burnt. Several fragments when put together showed that they belonged to a large globular vessel about $10\frac{1}{2}$ inches in diameter at the mouth, and half an inch in thickness. One very small fragment was found of a thinner but not finer kind, one-eighth of an inch thick. Reference to the pottery table will show that out of 428 fragments found in the second rampart 86 per cent. was of this medium quality, nine per cent. of the superior smooth kind, and only two per cent. of the coarsest kind, like that found in the upper rampart. This difference can hardly be the result of the mere accidental scattering of different kinds of pottery in different places on the surface, and must I think indicate a different and probably a later date for the second rampart; 1.3 per cent. was ornamented, chiefly in incised oblique lines, and different from that of the superior pottery in the pits. The animal remains consisted of ox and sheep as before, with the horn of a roedeer. Two artificially-rounded flint balls were found with the pottery (Plate XXIV. fig. 26); evidently they had been used as hammers, but not more than five or six flint flakes were found.

^a *Excavations at Seaford*, by Col. A. Lane Fox, in *Journal of the Anthropological Institute*, vol. vi. pl. xv. fig. 3.

^b *Excavations at Cissbury Camp*, by Col. A. Lane Fox, in *Journal of the Anthropological Institute*, vol. v. pl. xv. figs. 3 and 4.

At a distance of 7 feet 8 inches from the top of the counterscarp, a small gutter with a triangular section was found cut in the original chalk floor under the rampart, running across the section parallel to the ditch. It is the peculiarity of this downland, in which we were excavating, that as the surface mould is not more than 2 or 3 inches thick on the tops of the hills, any disturbance in ancient times which penetrated the chalk has preserved a perfect outline under the turf. The gutter was 4 inches deep and 6 inches wide at the top; when cut from the surface it must have been somewhat wider and deeper, and it was noticed in several places that where the dark seam marking the old surface passed over the gutter it was broken, showing that the turf had been cut through in making it.

Beyond the gutter at a distance of 12 feet from the edge of the counterscarp, we came to a vertical facing of rammed chalk, also running across the section parallel to the gutter and ditch. It rose to a height of about 2 feet 7 inches from the surface line in the body of the rampart, and behind it, that is on the south side between it and the gutter, there was the distinct outline of an old trench in the rampart about 2 feet wide and dipping to within a foot of the bottom, filled with dark surface mould, which made it quite distinct from the chalk rubble. The stratification of the chalk rubble was different before and behind this trench; before it, that is on the north side, the seams were horizontal, whereas behind it they were curved, forming what geologists call an anticlinal bend, and showing a difference in the mode of throwing up the material; consequently the trench, whatever it may represent, whether the position of a line of stakes or a turf revetment, must have been in existence during the time that the rampart was being formed.

I was at first inclined to think that the ground behind the chalk facing had been left uncovered as a kind of *terre pleine* (*chemin de ronde*), between the second rampart and the upper ditch, that the chalk facing was the interior slope of the second rampart, and the gutter or open drain along the *terre pleine*; but subsequent consideration led me to give up this idea, and to suppose that the gutter had nothing to do with the rampart, but was merely the drain of some structure erected on the outside of the upper ditch before the second rampart was made. In order to ascertain whether the chalk facing, and the trench, and gutter continued to run parallel to the ditch, the section was extended 20 feet to the east, when it was found that all three continued to run in a direction nearly parallel to the ditch. Three stake-holes containing fragments of wood were also found near the inside of the gutter, as marked in the plan (Plate XXII.). But perhaps the most interesting discovery remains to be mentioned. Mixed with

the pottery strewed upon the line of the old surface beneath the rampart, and close to the gutter above mentioned, were found a number of fragments of hard clay, of which Plate XXV. figs. 58, 59, are specimens, flat on one side and having on the other the impression of sticks. These, after some consideration, I perceived to be the remains of a clay wall impressed with the marks of wattling, and with a little attention to the forms of the pieces I have been able to re-construct a complete piece of the wattling, a horizontal section of which is shown in Plate XXV. fig. 60. The pieces of clay preserved the impression of the upright sticks, and by striking a radius from the curves of several pieces I was able to determine that the sticks were exactly three-quarters of an inch in diameter; then taking the measurement of several pieces from the impression of the upright sticks to the spot where the osier sticks interlacing between the uprights crossed one another I found that the sticks had been placed at 4 inches apart from edge to edge, and that the osiers were exactly one-third of an inch in diameter, exactly the size of those of a large hamper I happened to have by me. Measuring then the thickness of the clay pieces from the point of crossing of the osier sticks to the flat surface representing the outside of the wall I found that the whole wall must have been as nearly as possible 2 inches thick. The clay was pressed from both sides into the interstices of the wattling and smoothed on the outsides. One fragment contained the impression of a large stake $4\frac{3}{4}$ inches in diameter, just such a one as might fit into the holes found in the ground; another fragment had the impression of a twisted withy, probably forming the outside of a framework of wattling, just as in the hamper above mentioned it is seen that the two outer osiers of the basketwork are twisted in order to give the basket additional strength. By submitting several pieces to the test of acid I found that the clay was strongly mixed with lime.

Knowing that wattles were sometimes used to revet earthworks, my first impression was that I had discovered a piece of the revetment, but on considering the matter further I reflected that my evidence of the wattling was derived solely from the impression of it on the clay, and this was alone sufficient to disprove its having been employed for such a purpose. If it had been used for revetment there could have been no object in coating it with clay: the clay could only have been added in order to convert the wattling into a wall. We have here, therefore, one of the historical British huts mentioned by Strabo. This structure, of which the gutter above mentioned probably formed the outer drain, was erected outside the ditch at a time when the defences consisted of a single line of ditch and rampart. When the second rampart was formed afterwards, out of the materials excavated

from the second or outer ditch, they were thrown over the hut, the walls of which were thrown down and mixed with the broken fragments of pottery upon the floor. The wood of the wattling then decayed in process of time, and the clay coating broke up into pieces of a particular form determined by the lines of greatest weakness, and have been preserved by the rampart thrown over them.

There are not many positions in which materials of so perishable a nature would be preserved, and hence the few cases recorded of the discovery of wattle-work. Either the pieces must be burnt into brick and then preserved in water, or some accidental cause must have led to their being covered over. Although the clay coating in this case had been hardened by the admixture of lime the pieces must inevitably have perished if the rampart had not been thrown over them. Professor Daniel Wilson describes the remains of some primitive habitations, found beneath an accumulation of 8 to 10 feet at Black Moss on the banks of Loch Etive, in Argyleshire; they were about 6 feet in diameter, and surrounded with the remains of pointed hazel stakes, part, no doubt, of the remains of wattle-work.^a Mr. G. H. Kinahan gives an account, in the *Proceedings of the Royal Irish Academy*, of the remains of an ancient hut, found in a crannoge in Lough Rea, in which the vertical wall of wattle-work was discovered.^b In the Gaulish oppidum, called Castel Coz, in the parish of Beuzec, Finisterre, a camp very much resembling Mount Caburn in its contents, the remains of some of the clay coating of wicker-work burnt into bricks was found in connection with a number of pits in the interior, and associated with implements of both bronze and iron, and flint flakes, and pottery of three kinds, one coarse and badly baked containing silicious grains, another of fine clay without silicious grains, and fragments of Samian ware of the Roman period.^c In the Swiss lakes such discoveries have frequently been made. In connection with a pile-dwelling in the district of Borgo San Donnino, in the province of Parma, a station of the bronze age already referred to, pieces of half-burnt clay with the impression of wattle-work were found.^d At Möringen, and at Cortailod, stations of the bronze age, burnt fragments with the impression of wattle-work have also been found.^e At Auvernier some of the wattle-work itself was found, consisting of poles from 2 to 2½ inches thick, at distances of 2 feet apart, with rods of 1 to 1½ inch

^a *Prehistoric Annals of Scotland*, by Daniel Wilson, LL.D., vol. i. p. 106.

^b *Proceedings of the Royal Irish Academy*, vol. viii. p. 413.

^c *On Gaulish Fortresses on the Coast of Brittany*, by R. F. Le Man, *Archæological Journal*, vol. xxix. p. 327.

^d Keller, vol. i. p. 382.

^e *Ibid.* p. 184, 233.

in thickness interwoven between them, thus making a stronger and coarser structure than that found at Mount Caburn :^a such fragments have also been found in connection with a station of the stone age at Heimenlachen.^b Cæsar says that the houses of the Britons in his time were built after the manner of the Gauls ;^c and Strabo informs us that the houses of the Gauls were made of wattle-work.^d Diodorus Siculus, speaking more particularly of the habitations of the Britons, says that they had very poor wretched dwellings, composed for the most part of reeds and wood.^e The earliest city of Rome appears to have consisted of wattled houses coated with clay, and these were afterwards coated with mortar instead of clay.^f We may presume from this that the fact of our wattle-work in Mount Caburn being coated with a mixture of lime and clay indicates that the inhabitants had advanced beyond the most primitive stage of house-building.

In attempting to restore the rampart all we can do is to endeavour to reconcile the discoveries that have been made with such few statements relating to ancient fortifications as have been recorded in history. It is impossible to conceive that the description given by Cæsar of a British fortified town^g can be regarded as typical. The skill displayed in the selection of their sites negatives the supposition that they could habitually have been situate in the midst of woods. We find that they are for the most part erected on the summits of hills which from the nature of the soil could never have been thickly wooded. Even admitting, as was probably the case, that the forest trees grew at a higher level than is the case at present, the careful manner in which their ramparts are invariably traced so as to command the slopes proves that those slopes could never have been covered with wood, otherwise the advantages of the arrangement would have been nullified. Cæsar must have had in view some quite exceptional position which the Britons had occupied when attacked by him. The description given by Tacitus of the position chosen by Caractacus accords much more truly with what we ourselves are able to recognise in the British art of castrametation. "He chose," he says, "a place against which it was difficult to advance, in every way incommodious to our army and in every way favourable to his own. He then took post on the ridges of some lofty mountains, and where the sides were gently inclining and approachable he piled up large stones for a rampart, his position was also skirted by a river difficult to be forded, and troops of soldiers

^a Keller, vol. i. p. 235.

^b *Ibid.* p. 326.

^c *De Bello Gallico*, v. c. 12.

^d *Strabo*, lib. iv. c. iv. 3.

^e *Diodorus Siculus*, lib. v. 209. See also *Munimenta Antiqua*, vol. i. p. 14.

^f Smith, *Dictionary of Antiquities*, PARIS.

^g *De Bello Gallico*, v. c. 21.

manned his intrenchments." ^a But we may well believe what Cæsar says, that the avenues were defended by strong barricades of felled trees. ^b It is, however, to the Gauls that we ought to look for a description of what a fortress in this particular part of the coast of Britain might be expected to resemble.

Notwithstanding the opinion of a high authority to the contrary, ^c it appears almost certain that the Britons kept up frequent communication with Gaul. Cæsar says that the inhabitants of Kent differed but little in their manner from the Gauls, ^d and it was in consequence of the assistance that they had rendered to the Gauls when they were opposed to him that he invaded Britain. ^e They were kept well informed of his movements by merchants who resorted to their island. ^f Cæsar, as we have seen, says that they built houses like the Gauls, and Pomponius Mela that they were armed like the Gauls. ^g Mr. Evans has proved that they derived their coinage from the same source as the Gauls, ^h and Cæsar further adds that in the maritime parts the inhabitants were Belgic Gauls; and that they retained the names of the tribes from which they were descended. ⁱ

In the account given by Cæsar of the Gaulish rampart at Avaricum, ^j it is said that the earthwork was strengthened by a trellis-work of strong beams consisting of transverse timbers 2 feet apart, arranged so as to constitute by their length the thickness of the wall, ^k and these were covered by others to bind them together, and the intervals filled with earth. These were surmounted by other frameworks of the same kind, not resting on the lower ones, as they are represented doing in the Trajan column, but with intervals between. The beams it would appear were not intended to support the rampart, but only to serve as bonding, and enable it to stand of its own accord with the assistance of a stone revetment on the outside at an abrupt angle. The Emperor Napoleon III. gives an illustration of this rampart, ^l and discusses the question often disputed as to whether the beams were placed longitudinally or transversely; but what is more to the purpose is that in 1873 MM. G. Arnould and De Radiguès made an excavation in the ancient ramparts at Hastedon, and there found the actual remains of the trellis-work

^a Tacitus, *The Annals*, bk. xii. ch. p. 33, Bohn's edition.

^b *De Bello Gallico*, v. c. 9.

^c J. Y. Akerman, *On the Condition of Britain from the descent of Cæsar to the coming of Claudius*, in *Archæologia*, vol. xxxiii. p. 179.

^d *De Bello Gallico*, v. c. 12, 14.

^e *Ibid.* iv. c. 20.

^f *Ibid.* iv. c. 21.

^g Lib. iii. c. 6. *Horæ Ferales*, p. 187.

^h *The Coins of the Ancient Britons*, by John Evans, F.R.S., 1864.

ⁱ *De Bello Gallico*, v. c. 12.

^j *De Bello Gallico*, vii. c. 23.

^k *Translation by Duncan*, vol. ii. p. 23.

^l *History of Julius Cæsar*, vol. ii. p. 317, pl. 20.

in situ, with seven of the transverse beams in the position described by Cæsar. [Since this paper was read I have had an opportunity, in conjunction with Professor Rolleston, of examining the great Danevirke, which runs across Jutland from Schleswig. This fortification has been renewed and altered at different periods, and there is evidence of successive additions, but the oldest portions of it may even date as far back as prehistoric times. Borrowing a spade from a neighbouring cottage we dug into this rampart at a place where a natural breach had already been partly made, and found, at a depth of about 6 feet from the top, a layer of horizontal beams running across the rampart; they consisted of stems of beech trees, about 6 inches in diameter, with the bark on, and at irregular intervals of 2 to 4 feet apart beneath this, at about 9 inches between, was another layer of beams in the same direction, and horizontally across the beams were layers of birch bark intended to serve as bonding. We found the same construction in several places on the line of the rampart.]

It is evident from the position of the stake-holes in the upper rampart at Mount Caburn that they must have held upright stakes, between which longitudinal beams about one foot in thickness must have been laid horizontally. The holes, 2 to 2½ feet in depth, would be insufficient to give firmness to a stockade if intended to support the weight of an earthen rampart unless bonded with transverse beams in the manner above described,^a but no trace of any transverse beams could be discovered, besides which no continuous line of holes could be found, the others found in continuation of the large ones being quite small and shallow. I imagine therefore that the upright stakes may have passed through the rampart, being retained in their position by it, and may have been intended only to support a vallum on the top of the agger; that the small holes in the chalk represented the bottom of the stakes driven through the rampart, and the larger ones may have been sunk to an unusual depth in places to give additional strength.

A line of stake holes was discovered on the rampart of Uffington Castle, a camp near the White Horse in Berkshire, by Mr. Atkins,^b which went all round the camp; and holes supposed to be for this purpose have been found in the rampart at Worlebury,^c above Weston super Mare.

The meaning of the trench and chalk-facing in the second rampart is more

^a In the *Manual of Elementary Field Engineering*, 1877, p. 46, issued by authority to the army, it is laid down that stockades, when only intended to support their own weight in an upright position, are to be sunk three to four feet in the ground.

^b Davis and Thurnam, *Crania Britannica*, Skull from White Horse Hill.

^c *Visitor's Handbook to Weston-super-Mare*, p. 103.

difficult to determine; it may have been the place where a line of stakes were inserted in the top of the rampart, but it appears to me rather too much to the rear for such a purpose. It is possible, however, that it may mark the site of an interior revetment, or wall of turf, in the centre of the rampart.

In ramparts constructed of loose stones such interior facings have been frequently found. At Dunbeg, near Dingle, co. Kerry, an interior wall is seen in the middle of the rampart, which is undoubtedly meant to give additional strength, a single dry facing on the outside being insufficient to support the weight of a rampart of loose stones. At Dun Aengus and Dun Onag, in the island of Arran, similar interior revetments are employed for the same purpose.^a I believe that at Worlebury also it will be found that the revetted terraces on the top of the walls go down to the bottom and form interior revetments to support the wall; and in some of the Picts' brochs of Scotland, which are formed of loose stones, the same thing is seen. An interior revetment may sometimes have been formed in earthen ramparts, although the necessity for such a support in that case is not so obvious. In Moel Gaer, part of Moel Famma, in the valley of the Clwyd, Mr. Wynne Ffoulkes, who has done some good work in the examination of ancient camps in that neighbourhood, opened a part of the rampart, in which an interior central wall was discovered; unfortunately, no section but only a drawing is given of it.^b Mr. Ffoulkes has some useful remarks on the important results which may be obtained from a systematic examination of these ancient camps, which are well worthy of consideration. But the most important discovery of the system of double revetment in the rampart was that of the camp of Bonne, in the commune of Modave, examined by Messrs. G. Arnould and De Radiguès. Two dry walls were found, one on the outside and the other in the interior of the rampart, composed of flagstones 4 to 9 centimètres in thickness, and 40 to 50 centimètres broad, and of variable length. Each wall presented towards the outside of the camp an almost perpendicular facing. Between and all over the walls was an accumulation of loose stones which had formed the interior of the rampart, mixed with fragments of wood. Above the interior wall, and resting on it, were found the foundations of a masonry wall, the two lower courses of which were in place, and which contained in the interstices fragments of iron nails. The age of the camp is attested by the discovery of numerous flint implements, showing it had been occupied by people of the polished stone age, whilst Roman coins and objects of bronze also prove that it was inhabited at a later period. The authors consider

^a *Archæologia Cambrensis*, second series, vol. iv. p. 297; third series, vol. iv. p. 100.

^b *Ibid.* second series, vol. i. p. 174.

that the double dry walls, the wooden framework, and the superincumbent masonry wall, are the remains of three successive systems of fortification which have succeeded one another.^a Whether the central trench at Mount Caburn was an interior retaining wall of sods or not may be a matter of opinion. I draw attention to the subject more with a view to assist future exploration than to arrive at any definite opinion in this case. It may be observed the chalk escarp of the outer ditch rose at an abrupt angle of fifty-five degrees and was 13 feet high, before the upper portion of it had been denuded, and this may possibly have rendered a stockade on the rampart unnecessary. The width and extent of the outer ditch is remarkable, and it may be seen at a glance that the *deblai* must have considerably exceeded the *remblai*; on a rough calculation I estimate the former at about 330 square feet, whilst the *remblai*, including the talus on the slope of the escarp, and also a portion of the contents of the upper ditch, which must have silted down in that direction, cannot have exceeded 160 square feet. This is calculated solely on the section, making no allowance for the greater circuit of the ditch; this gives us, at the lowest calculation, 170 feet to be accounted for, and leads to the suggestion that possibly there may have been outer works still further to the north, some traces of which may be seen on the shoulder of the hill, at the foot of what may be termed the *glacis*. A considerable amount of dead ground, it will be seen, exists on the slope of this hill, which is not seen from the rampart, a most unusual occurrence in a British camp, and it is not unlikely that an additional rampart may have been thrown up at this spot, to see into the hollow, the materials for which may have been taken from the main ditch.

In concluding these remarks it may be desirable to sum up briefly the results of the investigation. It would appear that this camp is of recent origin as compared with many in this and other districts in which flint implements have been found. The evidence of the use of flint in Caburn is confined to a few flakes, which we are beginning to think may have been used for some purposes up to a later period than was at first supposed. The upper rampart may be older than the outer one, and may date from a time when pottery of the coarsest kind only was in use. On this point the evidence of the upper rampart is satisfactory as far as it goes, but ought only to be accepted provisionally. It may be remembered that at Seaford and Cissbury evidence of the same kind, though not so abundant, led to the same conclusion, namely, that the ramparts were older than some of the relics

^a *Compte Rendu du Congrès International d'Anthropologie et d'Archéologie Préhistoriques*, sixième session, Bruxelles, 1874, pp. 322-325, pl. 83.

of a later date found in the interior. And I may add that at Newhaven, having examined carefully the soil of the old camp now in process of being removed to make room for the modern fortification, I found several pieces of the coarser kind of pottery in the rampart, but not a single fragment of the superior quality which is abundant in the soil of the interior. That pottery of all three kinds may have been used together is not improbable, but the evidence keeps on accumulating that the inferior pottery was used first. In a barrow on Alfriston racecourse the Rev. Henry Smith, in 1869, found pottery which, in so far as one can judge by the description, appears to have been of the various kinds found in Caburn, but the occurrence of both brachycephalic and dolichocephalic skulls in this barrow led him, together with other evidence, to infer that it was used by successive races; similar varieties of pottery were found by him on the site of some ancient dwellings on the southern slope of Firle Beacon.* A similar mixture of pottery has been found in many places elsewhere, but more detailed observations as to the position are requisite in order to determine the relative ages. The table of the percentage of fragments of the three kinds found in the different parts of Mount Caburn will serve as data to future explorers in investigating this subject. The number of fragments indicate approximately the relative proportion of the three kinds, as the pieces are of tolerably uniform size, but the badly-baked pottery inclines to break up into smaller pieces, and the percentage of this class may therefore be slightly exaggerated in this table. It is possible that the pits in the interior may, some of them, have been filled up at a more recent date than the time of their construction, and that pottery of an older period may have got mixed with the other in the filling. Not until a considerable number of these camps have been examined with careful attention to these particulars can we arrive at any certain results. Pottery for use and pottery for funereal purposes appear to have differed materially at the same time, and we cannot judge of the former by urns found in the graves. The ornamentation of the pottery of the finest quality resembles that of Worlebury and Cissbury. I at first thought that it was Saxon but now believe it may be Late Celtic. Mr. Franks confirms me in this opinion. In 1862, Professor Boyd Dawkins discovered the remains of some ancient ironworks in the Weald near Battle, which he considered to be pre-Roman on account of the associated pottery being exclusively British.^b I have no means of comparing it with the specimens found in Caburn. It would be very desirable if archæo-

* *Sussex Archaeological Collections*, vol. xxii. p. 71; xxiv. pp. 154, 165.

^b *On the Antiquity of the Iron Mines of the Weald*, by W. Boyd Dawkins; *Transactions of the International Congress of Prehistoric Archaeology*, 1868, p. 189.

logical societies would introduce the practice of illustrating small fragments that are well authenticated, as they often afford the only evidence of date.

Domesticated animals were employed by the first occupants of Caburn, and in the pits the discovery of a few horn-cores have enabled Professor Rolleston to ascertain the presence of sheep as well as goat. This a short time ago would have been regarded as evidence of Saxon times, but I have now the authority of Professor Rolleston for stating that the sheep was introduced into Britain before the Romans. We have no evidence that it was introduced at the time of the first construction of the upper rampart, although both ox and pig have been found in it. Professor Rolleston further informs me that from the shape and size of the horn-cores, and from the occasional presence of four instead of two horn-cores (for which see Relic Table, Pit No. 9), he concludes that the old breed of sheep, still known in the north as the "Shetland and Iceland" (*Ovis brevicauda*), but unknown now except in the peat of the south, though once distinctive of Crete, was then one at least of the domestic breeds of the southern Britons. One human bone only was found, and that near the surface of the outer ditch, but how it got there I am unable to say.

Upon the whole I am inclined to interpret the evidence as favouring the first construction of Caburn during the late-bronze period or early-iron age, and its continued occupation into post-Roman times, but that it was never occupied by the Romans. Neither coins nor iron nails have been discovered as yet, and the single small fragment of Roman pottery found in the surface-mould of the large pit may be of any Roman age, either prior or subsequent to its abandonment as a camp. It is certain, however, that the materials for deciding this question are at present beneath the soil. The hill and its surroundings are as rich in the relics of prehistoric times as any of the lake dwellings of Switzerland. It is to be hoped that the present communication, however little light it may throw on the subject, will at least be instrumental in promoting further research. Of the customs of the Britons in regard to their dead we have abundant knowledge, derived from the examination of tumuli, but on the subject of their every-day life and industry our archaeological information in this country is very defective. It is hard upon a people who met Cæsar in the field, and produced Caractacus, that they should be handed down to posterity solely in the capacity of mutes and mourners. Camps and villages are the sources to which we must look chiefly for a knowledge of the living Briton, and the little that has been done in this field hitherto is of a nature to promise satisfactory results.

FURTHER EXCAVATIONS IN THE PITS IN MOUNT CABURN,
CONDUCTED IN JULY 1878.

The foregoing paper having been read to the Society of Antiquaries on the 20th of June, 1878, it appeared evident, from the discussion which followed, that a larger number of relics were desirable in order to determine the age of the pits. Whilst to some members of the Society it appeared probable that the remains were Late Celtic and pre-Roman, others considered them post-Roman, and I therefore decided to continue the excavation of other pits, commencing with the small pits to the east of those previously opened, and proceeding to those on the top of the hill to the south, all within the area enclosed by the rampart.

The pits, numbered 12 to 40, were of the same kind as the former small pits, the large pit already spoken of being a work of a totally different character to the others, and the only one in the camp or its vicinity. As the dimensions of each pit are given in the Relic Table it is unnecessary to describe them here further than to say that some of them were distinctly in clusters, and two pits, 13 and 16, were separated only by a low ridge of undisturbed chalk. Attention may be specially drawn to pits 22 and 23, which were close together; and to 24, 25, and 26, which formed another group, apparently associated together for some purpose, possibly in connection with huts formerly existing on the surface. When oval or oblong, the long axes, as before, were found to have no normal bearing, but were directed to all points of the compass. The pits varied from $2\frac{1}{2}$ to 5 feet in depth, and were filled chiefly with mixed rubble, though a few were filled with white chalk, as before. The position of the relics showed that they were probably thrown in haphazard with the filling, and not deposited for any special object, being found at various depths in the rubble. As already noticed, the oyster-shells were confined chiefly to the surface mould, and none were found deep down in the pits; I cannot doubt, therefore, that they must have been deposited after the pits had been filled up, on the surface, where they would collect in the shallow basins of the pits and work themselves down to a certain depth. Reference to the Relic Table will show that the fragments of pottery were of the same three kinds found before; but in addition to these another, of a superior quality, better

baked and grey, was found in some of the pits, but not in any quantity. In my previous communication it was stated that Samian pottery had only been found in the surface mould of the large pit. In the subsequent excavations also a single fragment of black Samian, one-sixteenth of an inch in thickness and 1 inch in length, occurred at 1 foot 9 inches beneath the surface in pit 35; and we know it to be quite possible for a thin sharp-edged object of this kind to work itself down from the surface to that depth. Another small fragment of red Samian was found in filling in pit 39, which may probably have come from the surface. This confirms the view already taken, that Samian pottery was not introduced until after the pits were filled up, an opinion which is strengthened by the subsequent discovery, to be hereafter spoken of, of numerous fragments of this earthenware in the adjoining camp at Ranscombe, within 500 yards of Caburn. One very small fragment of green glazed pottery, with a ribbed pattern, was also found in filling in Pit 34, and a piece of red tile, half-an-inch thick, at the top of Pit 39; these no doubt were of a date subsequent to the occupation of the camp, and considering the great quantities of the other kinds found in the pits, afford sufficient evidence that they were not in use by the original occupants. Reference to the Relic Table shows that out of the 1,566 fragments found in the twenty-nine new pits now opened, as much as 80 per cent. were of the superior quality, smooth, and well baked, without grains of sand or quartz, frequently ornamented with the curved grooves, edged with lines, represented in figs. 32, 35, 36, 40, and 41, and sometimes with lines of dots or chevrons as shown in figs. 37, 39, and 46. This proportion of 80 per cent. of the superior quality of pottery found in the pits must be viewed in connection with the fact already noticed, that not a single fragment of this pottery was found in the body of the upper rampart, the whole of the ninety fragments found there being of an inferior kind.^a The forms of the pots were of two kinds, one globular, of which a small fragment is shown in fig. 32, and the other flat-bottomed, like a saucepan without the handle (figs. 44 and 58). This saucepan-form appears to have been in frequent use in this neighbourhood. A similar one was found by Mr. Park Harrison in the small pits at Cissbury, previously alluded to, and is figured in the *Journal of the Anthropological Institute*.^b Another, for the knowledge of which I am indebted to Mr. Harrison, was found at Preston, near Brighton, and is in the Pavilion Museum. The small loop for suspension (fig. 42) is common to the pottery of various periods; its small size

^a In the twelve pits previously opened, 65 per cent. of the fragments were of the superior quality.

^b *Journal of the Anthropological Institute*, vol. vii. p. 422, pl. xi. fig. 4.

shows the purpose for which it was intended. The terra-cotta spindle whorls (figs. 50, 52, 53, 54, and 55) and the fragments of a stone one (fig. 22), coupled with the discovery of another bone comb (fig. 12), shows that weaving was a constant occupation of the inhabitants. It is not a mere military earthwork that we are dealing with, erected during warlike operations, but a permanent abode, in which women performed their usual avocations and the labours of the husbandman were not neglected. The sling bullet of clay (fig. 47) is worthy of attention; that this was its use there can be little doubt from its exact resemblance to the Greek and Roman leaden pellets of the same form. In size it naturally exceeds the Roman model, otherwise it would not have been heavy enough to serve as an effective missile; its weight, 263 grains, is the least that would be desirable for such a purpose. Both in form and size it resembles closely the sling stones used by the natives of New Caledonia, but the greater weight of the latter would render them more formidable as missiles; the pointed oval form adapts it to lie evenly in the broad bend of the sling, and to receive the rotatory motion imparted to it by the release of one of the thongs. The occurrence of this missile throws some doubt on the supposed use of small shore pebbles as sling stones, which has often been attributed to them when found in the ditches of similar entrenchments. May not these, however, have been used as throw stones, projected with a rotatory motion by the hand, whilst the artificial oval was employed for slings? Clay sling bullets, made red hot, were used by the Nervii, in their attack upon Cicero's camp,^a to fire the straw-thatched roofs of the Romans, and a quantity of ovoid balls made of baked clay have been found at Breteuil (Oise).^b Several similar ones are in the Salisbury Museum, having been found in the pits at Highfield. They have also been found at Carthage, and Mr. Evans informs me that he has some in his collection from Algeria. The practice of throwing red hot stones from slings was also employed by the New Zealanders.^c

If the iron object represented in fig. 4 is a ploughshare, it is a small one; its small size does not, however, preclude the possibility of its being an implement of this character. Some of the Indian ploughshares in the India Museum, for example, are smaller than this. It has not, however, the projecting shoulder usually seen in Roman ploughshares, an example of which, found by the Abbé Cochet at Liffremont, in the canton of Forges-les-Eaux, is figured in Roach Smith's

^a *History of Julius Caesar*, by Napoleon, vol. ii. p. 256. *Cæsar, De Bello Gallico*, v. c. 43.

^b In Wilde's *Catalogue of the Museum of the Royal Irish Academy* mention is made of a brass mould for casting oval pellets. Stone, p. 18.

^c *Old New Zealand*, by a Paheka Maori.

Collectanea,^a and others found by M. Edouard Joly, of Renaix, in Eastern Flanders, are to be seen in the same work. Whether this be so or not the operations of agriculture are represented by the sickle (fig. 30); this closely resembles the one found in the small pits at Cissbury to which allusion has already been made when speaking of iron bill-hooks,^b as well as that found at Hod Hill.^c These sickles are connected with the bills, the spuds, and the plough-shares in the form of their sockets, open at one side; such sockets, formed by enlarging the blade at the base into a flat plate 4 to 5 inches wide, according to the size of the implement, and then beating the sides over the haft, form a marked characteristic of the implements of this period, as many as four examples of different tools hafted in this manner being represented in these plates. Next come the loom weights of chalk (fig. 28), seven of which were found together in the bottom of Pit 40; a similar one was found in the small pits of Cissbury, and others have been found in other parts of the same camp.^d Similar weights in clay have been found in Scotland and elsewhere, specimens of which from Montblair, Banffshire, and Ravensby, Forfarshire, are in the museum of the Society of Antiquaries of Scotland.^e They were used to weigh down the warp in the process of weaving. It has even been suggested that the pits themselves may have been sunk to receive such weights when attached to looms, the necessities of the case requiring that the weights should extend beneath the surface. It must be borne in view, however, that the interior of the camp is completely honey-combed with these pits, a condition of things which precludes the likelihood of their having been constructed for the purposes of any one art or manufacture. They must have been made for some use that was common to the whole population, and if connected with habitations must have been attached to every hut in the place. That such was the case appears evident from the discovery of the fragments of daubing (figs. 58 and 59) not in the rampart only but in several of the pits—in the interior as well as in the small pits at Cissbury.^f With the suggestion that the pits were graves I cannot concur; neither here nor at Cissbury

^a Roach Smith, *Collectanea Antiqua*, vol. vi. p. 281.

^b *Journal of the Anthropological Institute*, vol. vii. p. 422, pl. xi. fig. 7.

^c Roach Smith, *Collectanea*, vol. vi. p. 7, pl. iii. fig. 7.

^d *Journal of the Anthropological Institute*, vol. vii. p. 425, pl. xi. fig. 15. Possibly its identity might not be recognised from the description given of its resemblance to a cranium of some animal.

^e *Catalogue of Antiquities in the Museum of the Society of Antiquaries of Scotland*, p. 41.

^f See the discussion on Mr. Harrison's paper in the *Journal of the Anthropological Institute* above quoted.

does there appear to me to be any evidence to favour this view. All the bones were in excellent preservation, and only three human bones have been found in the whole of the diggings, viz. a right ulna in the outer ditch, a femur in Pit 16, and part of a lower jaw at 1 foot 9 inches beneath the surface in Pit 27. The lower jaw is here represented half size. The alveolar portion of the jaw at the symphysis is deeper relatively to the mentum proper than is commonly the case in modern European lower jaws. The angle is well developed; and on the whole it is not otherwise than well formed, and is such a jaw as one might expect to have belonged to an individual of any of the Celtic races that are known to us. These bones, like the others, are in good preservation, and serve as an exception proving a rule by showing that human bones, had they existed, would have been preserved as well as the others, and would not, as has been suggested, by some unexplained process have disappeared whilst the animal bones remained. To what cause we are to attribute the presence of these human fragments mixed up in the pits with the remains of what is evidently the kitchen and other refuse of a people so generally characterised by respect for the dead, it is less easy to determine. Conjectures will no doubt be rife on this as on other occasions of like occurrence, with respect to some of which may perhaps be applied the motto "*Honi soit qui mal y pense.*" I have myself no suggestion to offer except this, that the pits may perhaps have been filled up after the capture of the place, when limbs of the dead or wounded may have been thrown in with the refuse. Yet this would hardly account for a lower jaw being separated from its cranium unless the bodies were greatly mutilated, or unless it is an old bone that has got in accidentally. To nothing found in Caburn is it more difficult to assign a use than the two curved iron objects (figs. 16 and 17); they resemble exactly one found in the small pits at Cissbury and figured in the *Journal of the Anthropological Institute*.^a It is stated to have been there found in connection with some decomposed wood, and it differs only from the Caburn specimens in being curved back at the end opposite the loop. Somewhat similar curved bars, but having a straight bar at the end instead of a loop, have been found frequently in association with Roman remains. Two of these from Jordan Hill, near Weymouth, are in my collection. Two others from Hartlip, between Rainham and Sittingbourne, are figured



PORTION OF LOWER JAW.

^a *Journal of the Anthropological Institute*, vol. vii. p. 425, pl. xi. fig. 12.

in Roach Smith's *Collectanea*.^a They were associated with Roman remains, but the author was unable to assign a use for them. Another is in the British Museum and was found by Mr. Akerman, in Wiltshire. Mr. Park Harrison suggests that they may possibly have formed the handles of stoups, having found one in connection with *débris* of wood. They must at present remain an enigma. The iron object (fig. 9) like the staple of a bolt is also obscure as to its use. I suggest the possibility of its having been the loop attached to the sheaths of swords and daggers to hold the belt, examples of which may be seen in the plates accompanying *Horæ Ferales*, plate xvii. fig. 2, and plate xviii. figs. 2 and 5, in Roach Smith's *Collectanea*, vol. iv. plate xxxiii. figs. 3 and 4, and elsewhere; if so, it is Late Celtic. The iron javelin heads (figs. 2 and 3) offer nothing remarkable in their form. Fig. 7 adds another to the form of knife so frequent in Roman times and probably earlier, numbers of which and of several varieties of this form were found at Hod Hill, in Dorsetshire.^b Fragments of deerhorn, cut off as if to form handles (figs. 23 and 27), were found in one or two pits, and the horns from which they were cut. In Pit 24 a remarkably fine stag's horn was found at the bottom, 2 feet 3 inches in length, with four points cut off in this way: they were sawed through from one side with a sharp metal instrument to within a quarter of an inch of the other side, when the piece in every case had been broken off. The small sandstone burnisher (fig. 29) is an object common in Celtic, Danish, Swedish, and Irish remains of the iron age. The present example shows marks of use at the edges.^c But by far the most instructive portion of the Mount Caburn finds consists in the discovery of five British tin coins, three of which are represented in figs. 61, 62, and 63. They were found in Pits 22, 23, 29, and 37, and at various depths; their weights are 17, 20, 20, 22, and 30 grains respectively. The impression on the obverse is a head in profile, helmetted; the eye is shewn by a single ring, with a line in one case projecting from it downwards; the outline of the face is shown by two crescents. The device on the reverse, according to Mr. John Evans, who has described similar tin coins in his work on British Coins,^d represents a bull which is turned indifferently to the right or left. There are also apparently some crescents above in figs. 62 and 63, and a ground line beneath the animal in all. Fig. 61 shows some indication of horns. These

^a Roach Smith, *Collectanea Antiqua*, vol. ii. p. 20, pl. vi. figs. 2 and 3.

^b *Ibid.* vol. vi. p. 7.

^c One of these has since been found in my presence by Mr. Hilton Price in a pit in the interior of the citadel of the Herefordshire beacon camp on the Malvern Hills.

^d *Ancient British Coins*, by John Evans, F.R.S., pp. 123-129, pl. II.

coins, like those described by Mr. Evans, have been cast in a string and then separated with a chisel, and the difference in weight is owing to the amount of the runlet left attached to the coin. The projections, showing the position of the runlets, occur above and below the head on the obverse, and in front of and behind the bull on the reverse as described by Mr. Evans, but I could not in these specimens discover the marks of the grain of the wood which he refers to as proving in some cases that they were cast in wooden moulds. These tin coins have been found generally in the Kentish district, though one of them has occurred as far west as Dorsetshire, but they are far more common in France. One at Weycock, Berks, was found in association with Roman remains, and one was found at Hod Hill, near Blandford, in the camp already so frequently alluded to as containing a similar class of implements to those found in Caburn. With regard to the date to be assigned to these tin coins not much can be said. To use the words of Mr. Hawkins, who is quoted by Mr. Evans, "their form and fabric are so unlike those of any other known coin that little can be safely asserted respecting them or the exact period when they were in circulation." Mr. Evans, however, thinks that "their small intrinsic value points to a degree of civilization requiring small change for ordinary commercial transactions," and that "the degeneracy of their type is another argument against their being of any great antiquity in the series." The present discovery, by determining with certainty the character of the remains associated with them, throws additional light on the subject, and confirms, without doubt, the fact of their being of the Late Celtic period; they are, however, certainly of native manufacture, and must have been struck previously to Vespasian's conquest of this part of the country in the forty-third year of the Christian era. No other coin was found in the place. Their similarity to the coins of Gaul also affords confirmatory evidence of connection of these people with the Belgæ, as stated by Cæsar.

EXCAVATIONS IN RANSCOMBE CAMP.

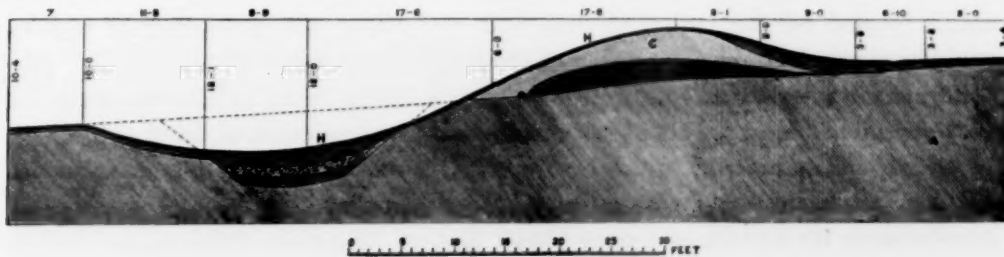
I must now conclude this paper by a short account of the excavation in the rampart of Ranscombe Camp, by means of which additional light has been thrown on the date of both this and the Caburn earthworks.

The point selected for cutting a section was near the centre of the line of ram-

part which faces Caburn, and cuts across the summit of the hill at about 500 yards from it to the westward. This strip of rampart is about 600 feet in length, and runs north-east and south-west. The north-east end abuts at right-angles on the edge of the hill, which is here steep enough to afford sufficient protection to the defenders without a rampart. There is an opening 6 feet wide through the rampart at the edge of the hill, that is to say, that the rampart does not extend to within more than 6 feet of the edge, as is so frequently the case with prehistoric earthworks,^a and another opening, whether ancient or modern, has been cut at 120 feet from it. At the other or south-east end, at a part of the downs called Scabs Castle, the line of the rampart, now reduced to a mere terrace, bends to the west for about 700 feet, still commanding the slope to the south, and then turns north-west, running to a spot called Cold Coat, in the 6-inch Ordnance map, which is now a terrace, but originally part of the entrenchment. From thence it can be indistinctly traced in the cultivated ground round the west and north-west side of the camp until it reaches the hill again on the north and north-east, which, being very steep, had never been strengthened with a rampart. The only part of the rampart now remaining in a perfect condition was the 600 feet to the south-east above-mentioned. Through this the section was cut at 155 feet from the edge of the hill on the north, and about 37 feet from the centre of the southern opening before alluded to. The section was 8 feet wide, and extended from about 6 feet within the interior slope to a short distance beyond the counterscarp, a distance of about 80 feet. The old surface line here sloped down to the east, that is, towards Caburn, at the rate of about 1 in 14, there being a slight depression in the ridge of the hill between the two camps. Near Caburn the ground rises again, and this camp stands at a considerably higher level than Ranscombe. The whole of the intervening space is seen from both sides, and the ground covered with smooth turf has no break in it to impede the view. The position is one in which it is easy to imagine two hostile forces drawn up in face of each other. In cutting the section the line of the old surface was laid bare everywhere, and the undisturbed chalk exposed on the sides and bottom of the ditch, the original form of which was by this means ascertained. The crest of the rampart was found to be 5 feet above the old surface line beneath it, and 11 feet above the present bottom of the ditch. The bottom of the ditch had originally been cut to 7 feet 3 inches below the old surface line, but it had been reduced by silting to a present depth of $3\frac{1}{2}$ feet below that line. The ditch had originally been 26 feet wide at the top,

^a Examples of this may be mentioned in the case of the Danes' dyke at Flamborough, the camp at Dieppe, and other places.

and 10 feet wide at the bottom, and the sides cut in the native chalk sloped up at an angle of about 40° with the horizon, but in the course of ages the ditch had been widened to 35 feet at the top by the denudation of the upper part of the sides, and chiefly on the counterscarp side, where it may, perhaps, have been cut away in more recent times to afford material for increasing the height of the rampart.



SECTION OF THE RAMPART, RANSCOMBE CAMP.

A. Undisturbed ground. B. Mould in remblai, containing coarse British pottery and stag's horn. C. Chalk in remblai, containing a fragment of British pottery. D. Silting of ditch, containing British pottery. E. Hard crust of chalk silting. F. Silting of ditch, containing Roman pottery. G. Silting of interior slope, containing Roman pottery, including Samian. H. Surface-mould.

The following are the results of the digging. In the "body" of the rampart was found a stag's horn and three fragments of coarse British pottery, with large grains of quartz, badly baked, all on the old surface line, and no pottery of any other kind. The silting of the ditch was divided into two parts, upper and lower, by means of a hard horizontal crust of rammed chalk 7 inches to 1 foot in thickness, below which, and between it and the old bottom of the ditch, was a layer of loose chalk rubble 9 inches thick, and above it a deposit of mould 1 foot 8 inches thick, and modern surface mould over all. This crust of chalk was so hard as almost to require blasting, and it took two men half a day to cut through a superficial area of five feet of it. It was not perfectly horizontal, but formed a synclinal bend conforming to the curvature of the silting, and it had evidently been formed by treading on the surface during wet weather, at a time when the ditch had only silted up to that height and the superficial deposit of mould had not yet been thrown upon it, probably not long after its construction, because in all the sections of ditches that I have cut in other works there is reason to believe that the rampart when it was new and loose silted down more rapidly than afterwards when it became consolidated, and the loose deposit of chalk rubble invariably found in the bottoms of these ditches probably belonged to the period when the rampart

had not had time to become firm. This crust of puddled chalk therefore separated two distinct periods of silting, the chalk rubble below representing the period of the first construction of the camp, and the mould above representing the period of its subsequent occupation. It was important therefore to examine carefully the contents of these two deposits. The evidence is the same that has been adduced frequently before by me in the case of other ditches, but in no instance has its value been so clearly shown as here on account of this hard crust formed during a middle period of the silting process and preventing the possibility of objects working themselves down through it into the lower parts of the ditch. The following are the results of a careful observation of the relics as they were turned up. In the mould above the crust were found 146 fragments of hard well-baked pottery, equal or superior to the best quality found in Caburn, but without its elaborate ornamentation; also a fragment of Roman tile with the well-known grooves upon it; numerous oyster shells, but no fragment of the coarse British pottery. In the rubble below the crust were found four pieces of coarse British pottery, distributed in different parts of the bottom of the ditch, badly baked, with large grains of quartz, corresponding to the most inferior quality found in Caburn, but not a single fragment of the superior quality of pottery, and no oyster shells. Flint flakes were found both above and below the crust, but below they were in enormous quantities, every shovel throwing out several.^a Turning now to the silting of the interior slope of the rampart, the relics in which, as I have already explained, belong to a period subsequent to the construction of the rampart, and contain objects dropped on the rampart in after times and covered up during denudation, I found at the bottom 20 pieces of hard baked pottery of the same quality that was found above the crust in the ditch. Not a single fragment of coarse British pottery, but in its place three fragments of red Samian. Red Samian, as is well known, affords proof positive of Roman occupation. The other hard kind of pottery used in Roman times it may perhaps be difficult to distinguish from the superior quality of Celtic by means of fragments only; but wherever a piece of Samian occurs the Roman foot has trod. Finding three pieces of this earthenware in the small space of 8 feet by 4 feet occupied by the silting of the interior slope in the section, I determined to cut a trench 4 feet wide for some distance along the foot of the interior slope, to see how much more

^a The fact of finding flint-flakes above the crust may be accounted for by their great abundance in this camp; they accompanied the soil in all its shiftings. A space just outside the ditch, where the turf had been removed, was literally strewn with them. This is one of the circumstances from which I argue that Ranscombe was the older camp of the two.

would turn up. This trench extended for 75 feet to the south along the foot of the slope, taking out all the silting, with the following results: hard-baked brown pottery, 462 fragments, or 87·7 per cent; fine well-baked grey pottery, 26 fragments, or 4·9 per cent; Samian 18 fragments, or 3·4 per cent., but not a single fragment of the coarse British pottery which had been found, to the exclusion of all other kinds, in the body of the rampart and the bottom of the ditch. These facts, coupled with the circumstance already mentioned, that only three small fragments of Samian were found in all the excavations in Caburn, and these only on the surface, afford evidence of a satisfactory and, it may be almost said, of a conclusive character, and enable us to state with something like precision the history of these camps. Both camps were originally British; Ranscombe camp probably the earliest. Caburn was occupied by a Late Celtic people, whose arts and coinage show them to belong to a period immediately preceding the Roman conquest of this part of the country; but it was never occupied in any force by the Romans. Ranscombe, on the contrary, the part of it at least which faces Caburn, though originally British, like Caburn, was subsequently occupied by the Romans, and I may perhaps be allowed a few lines more to state under what circumstances I consider that occupation to have taken place.

Mr. Horsfield in his *History of Lewes* has given some reason for supposing that the town itself was the site of a Roman camp; be that as it may, it is not likely that they had any permanent station on the downs. The green sward, which, as I said before, covers the hill between the two camps, extends for some distance into the interior of Ranscombe camp, and the ground has never been disturbed by any such excavations as would undoubtedly have been formed if this camp had been occupied permanently by the Romans. No trace of huts or pits of any kind can be seen here, yet the occupation of the rampart itself in Roman times is incontestable. The pottery found at the foot of the interior slope must have been broken on the rampart, and have fallen to the foot of it; for although the trench was widened and lengthened beyond the 72 feet above mentioned, no fragments were found elsewhere than at the foot of the rampart, and the point at which it died out at the end of the trench was coincident with the point at which the rampart became reduced in size. The occupation, though temporary, must nevertheless have lasted some days, during which the Roman forces must have stood on guard upon the rampart, and must have eaten and drunk and broken the vessels containing their food without leaving their post. What could have induced the Romans to guard thus jealously an entrenchment that was not of their own construction? Nothing, I apprehend, but the immediate presence of an

enemy, and, if so, that enemy could have been none other than the defenders of Caburn. I assume, therefore, that we have evidence here of an attack of the Romans upon Caburn; finding that the south-eastern rampart of the old and, probably at that time, abandoned camp at Ranscombe offered all the advantages requisite for an attacking force, they utilised it, just as an army in our own time would do under like circumstances; in that position they stood facing the Caburn at a distance of 500 yards, in a good defensible position, with both flanks resting upon strong ground. They formed it in fact into part of a line of countervallation such as we know it to have been the habit of the Romans to construct in attacking a place, or it may have been used merely as a camp of observation during the attack. Whether the place was invested all round or not, I have no means of judging, but whether it was attacked from this side only or invested, it is by no means a rash or unreasonable conjecture in the face of the evidence before us to assume that Caburn may have been one of the twenty oppida which Suetonius states to have been reduced by Vespasian during his conquest of this part of Britain.

NOTE.—Since these papers were written I have visited Gergovia, the *oppidum* of the Arverni, which was the scene of Cæsar's defeat by Vercingetorix, and have obtained from the neighbourhood of the fortress several iron implements which correspond in form with those found at Mount Caburn. An iron bill has the projection at the back and is in all respects similar to Pl. XXIV. fig. 13; a plough-share is precisely similar to fig. 4, and appears to set at rest the question as to the use of this object; the axes have the socket at right angles to the blade like that from Mount Caburn. Others of the same character are in the Museum at Clermont Ferrand; unfortunately the records of the discovery of these objects are not sufficiently detailed to enable us to determine whether they are Gaulish or Roman; but as Gergovia was abandoned soon after the Roman conquest there is a probability in favour of a Gaulish origin for the objects found there. At any rate, the similarity of these implements to those from Mount Caburn is worthy of being recorded.

MOUNT CABURN RELIC TABLE, SEPTEMBER, 1877.

Showing the number of fragments of different kinds of Pottery of one inch and upwards in size found in different Pits and Sections, with the associated objects and Animal Remains.

No.	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS, as identified by Professor Rolleston, F.R.S.	
				Coarse, with large grains, soft, hand-made british.	Medium quality, with small grains, hard, mostly light- coloured.		Smooth, soft, without grains, chiefly brown or black, lathe- turned.		Finest quality of unglazed, chiefly grey, lathe-turned.	Samian.		Ornamental.				
					No.	Per- centage.	No.	Per- centage.		No.	Per- centage.	No.	Per- centage.			No.	Per- centage.
1	Top of Pits Nos. 1 and 2	Sept. 3rd, 1877	Brown surface-mould 10 inches deep in centre and 3 to 4 inches at sides	5	17.2	2	6.9	22	76.0	...	...	...	...	...	Iron spud at 1 foot 11 inches (Plate XXIV, fig. 5). Whorl of pottery at same depth (fig. 55)	Bos, Ovis or Capra hircus. Helix ne- moralis and as- persa. Oyster-shells in surface mould only
2	Bottom of Pit No. 2	Sept. 4th, 1877	Oval, 7 feet 1 inch by 4 feet 7 inches at top, and 6 feet 4 inches in depth, sides sloping in slightly towards the bottom. The filling beneath the surface- mould was mixed chalk and dark mould	1	16.0	...	...	5	83.3	...	...	...	...	...	Stone pebble grooved on both sides to hold a string, at 5 feet 4 inches (fig. 20)	Sus scrofa. Bos longifrons (adult and calf). Ovis or Capra, young, Horse (Equus caballus). Helix nemoralis. Oysters at top of surface only
3	Bottom of Pit No. 1	Sept. 3rd, 1877	Squarish, 4 feet by 4 feet 4 inches at top, sides sloping slightly inwards, depth 6 feet 2 inches, filled with pure white chalk rubble be- neath the surface-mould, and very few animal bones	...	...	...	...	1	100	...	...	...	...	...	Shore pebble rubbed on one edge (fig. 21), at 5 feet 4 inches. Bone comb (fig. 11), at bottom. Bottom of vase of smooth black pottery (fig. 57), and a scale of iron armour or piece of cheekpiece of helmet (fig. 8), with bronze rivets, at bottom of pit	Bos (blade-bone and horn-core) at the bottom
4	Surface-mould of Pit 3	Sept. 4th, 1877	Surface-mould	...	...	...	...	72	100	...	...	...	...	...	...	Equus (tooth). Bos (tooth and humerus)
5	Body and bot- tom of Pit No. 3	Sept. 4th, 1877	Oblong, 5 feet by 3 feet, 11 inches at top, sides slightly sloping inwards, 4 feet 4 inches deep, sides cut smoother than in preceding pits, and corners sharp, filled with mixed chalk and black mould	10	33.3	...	...	20	66.6	...	...	...	...	...	Found at bottom, a horn handle of knife ornamented with circles (fig. 25). An iron bill (fig. 13). A small bar of iron (fig. 14). A fragment of earthen pot sides 5 inches deep (fig. 56). Frag- ment of a globular vessel	Capra hircus, small. Sus. Bos. Helix nemoralis

Mount Caburn Relic Table, September 1877—continued.

No	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS, as identified by Professor Hutton, F.R.S.		
				Coarse, with large grains, soft, hand made British.		Medium quality, with small grains, hard, mostly light- coloured.		Smooth, soft, without grains, chiefly brown or black, lathe- turned.		Finest quality of unglazed, chiefly grey, lathe turned.		Samian.				Ornamental.	
				No.	Per- centage.	No.	Per- centage.	No.	Per- centage.	No.	Per- centage.	No.	Per- centage.				
6	Pit No. 4	Sept. 5th, 1877	Round, diameter 7 feet at top, and 5 feet 8 inches at bottom, depth 5 feet 10 inches. At the bot- tom in the centre was a layer of clay, rammed, about 2 feet square and 2 inches thick. Pit filled with pure chalk rubble beneath surface- mould	...	...	9	18.9	37	77.08	...	...	...	...	2	4.1	A flint strike-a-light. Two pieces of ornamented pottery, one rough red, ornamented with parallel incised lines, the other smooth, ornamented with squares (fig. 39)	Bos longifrons, Equus, Capra hir- cus, Sus (tusk), Oyster shells in sur- face mould only; Helix aspersa and Helix nemoralis
7	Pit No. 5, upper part	Sept. 5th, 1877	...	2	12.5	4	25.0	6	37.5	...	...	...	...	4	25.0	Two flint-flakes at top. Four pieces of ornamented pottery with curved lines and dots and parallel lines, found at top (fig. 32)	Bos (scapula and rib), Ovis or Capra hir- cus
8	Pit No. 5, bot- tom	Sept. 6th, 1877	Oval, 6 feet by 3 feet 3 inches at top, depth 5 feet 6 inches. Rubble mixed	...	...	2	14.2	11	78.5	...	...	...	...	1	7.1	One flint-flake at bottom. One piece of ornamented pottery like fig. 32 preceding	Sus. Bos. Ovis (large horn-core, as in Shed- land rams). Roe, metacarpal
9	Pit No. 6, upper part	Sept. 6th, 1877	...	...	...	...	...	18	100	...	...	...	...	...	...	...	Sus. Bos. Two skulls of Arvicola found in hole in the side near bottom
10	Pit No. 6, lower part	Sept. 6th, 1877	Oval, 8 feet by 7 feet at top, white chalk rubble, depth 6 feet 5 inches	8	80	...	...	2	20	...	...	...	...	...	...	...	Bos. Sus. Ovis. Two mussel shells. Oysters found at top in surface - mould only
11	Pit No. 7	Oct. 11th, 1877	Round, 4 feet 6 inches at top, and 5 feet 2 inches deep, rubble mixed	...	...	...	...	32	100	...	...	...	...	...	...	...	Bos. Sus. Ovis.
12	Pit No. 8	Oct. 12th, 1877	Oval, 5 feet 4 inches by 4 feet 3 inches at top, 3 feet 6 inches deep, rub- ble mixed	...	...	5	23.8	16	76.1	...	...	...	...	...	...	...	Badger, old and young. Bos. Sus. Capra (core). Ovis, two, one with four horns, probably of
13	Pit No. 9	Oct. 12th, 1877	Circular, 6 feet in dia- meter at top and 3 feet at bottom, 5 feet 6 inches deep, filled with dark mould	48	72.7	6	9.0	10	15.1	...	...	...	...	2	3.0	A rough deerhorn knife-handle at top. A knife-handle of deerhorn, with a hole for suspension, near bottom (fig. 31). A ring of bronze armour 1½ inch in dia-	

14	Pit No. 10	Oct. 13th, 1877	Oval, 5 feet 4 inches by 4 feet 6 inches at top, and 4 feet 6 inches deep	...	...	...	...	...	...	100	...	...	...	...	...	...	A fragment of the edge of a bronze spearhead (fig. 18). A sharpening stone, three shore pebbles, piece of iron pyrites, and a small globular vessel 2 inches in diameter (fig. 34)	same breed as so- called "Iceland" or "Shetland"; not rare in peat
15	Pit No. 11	Oct. 13th, 1877	Oval, 4 feet by 3 feet 2 inches, and 3 feet 1 inch deep	20	55.5	8	22.2	6	16.6	...	...	...	2	5.5	...	...	Piece of pyrites	Bos. Sus. Ovis (horn- core)
16	Twin Pits	Sept. 6th, 1877	One oval, 5 feet 5 inches by 4 feet 6 inches at top, the other round, 3 feet 10 inches in diameter at top, both 4 feet deep	...	...	2	16.5	8	66.5	...	...	...	2	16.5	...	...	Iron knife found at bottom of largest pit (fig. 6). Two pieces of ornamental pottery with curved grooves, like that found in Pit 5	Sus. Bos.
17	Top of large Pit	Sept. 5th to Sept. 7th, 1877	Total of small pits in the interior up to this point	94	22.3	38	9.0	276	65.5	...	...	...	13	3.0	...	...	Piece of iron slag and one piece of pottery at bottom of shaft. Two pieces of pottery, apparently Roman	Sus. Bos. Roe. Fight- ing cock spur and other bones. Sea- pula of rabbit. Helix aspersa and oysters at top only
18	Interior slope of upper rampart	Sept. 8th, 1877	Basin-shaped depression in the interior of camp 35 feet in diameter and 5 feet 6 inches deep below upper edge, in the bottom of which was a shaft 11 feet deep, 12 feet in diameter at top, and 5 feet 3 inches at bottom, filled with white chalk rubble and flints, black in the fractured parts	6	19.3	18	58.0	7	22.5	...	...	...	...	...	...	...	Some of this pottery had probably been washed down from the in- terior and become silted over by the denudation of the rampart	Bos. Ovis. Roe. Os calcis of sheep or goat, gnawed by a dog
19	Body of upper rampart	Sept. 10th, 1877	...	88	97.7	2	2.2	...	...	...	...	...	...	...	...	...	Six flint-flakes. Holes for pali- sades found in old surface. The pottery from this place must be anterior to the construction of the rampart, and was found chiefly on the line of the old surface	Sus. Bos.
20	Upper ditch surface-mould	Sept. 8th, 1877	Surface-mould	14	54.0	8	30.8	4	15.5	...	...	...	...	...	...	...	Ten flint chips	Sus. Ovis. Bos. Oysters
21	Upper ditch, second and third strata	Sept. 8th and Sept. 10th, 1877	Second and third strata	3	60	2	40	...	...	...	...	...	...	...	...	...	A few flint-flakes. Three shore pebbles	Rabbit. Ovis. Sus. Bos. Oysters only in second stratum

Mount Caburn Relic Table, September 1877—*continued*.

No.	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS, Professor Huxley, F.R.S.			
				Coarse, with large grains, soft, hand-made British.		Medium quality, with small grains, hard, mostly light-coloured.		Smooth, soft, without grains, chiefly brown or black, lathe-turned.		Finest quality of unglazed, chiefly grey, lathe-turned.		Samian.				Ornamental.		
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.					
22	Inner side of second rampart between the ditch and the gutter	Sept. 11th, 1877	...	4	1.2	274	86.2	35	11.0	...	...	...	...	...	...	Numerous fragments of clay with the impression of wattle. The five pieces of ornamented pottery were chiefly with parallel lines on edge. Pottery found on old surface line	Bos. Ovis.	
23	Body of second rampart beyond the gutter, and between it and the puddled wall	Sept. 12th, 1877	...	2	4.3	43	91.5	1	2.1	...	...	...	...	...	1	2.1	Two flint hammers (fig. 26)	Bos.
24	Body of second rampart north of the puddled wall or division	Sept. 12th, 1877	...	1	2.8	36	97.3	...	...	...	...	...	...	...	...	...	...	Roe
25	Second and third sections in second rampart	Oct. 12th, 1877	...	4	12.5	24	75.1	4	12.5	...	...	...	...	...	...	...	A few flint-flakes. These sections were cut in the interior sides of the second rampart subsequent to the others	Bos. Ovis.
26	Outer ditch	Sept. 13th, 1877	Total in second rampart	11	2.5	377	86.8	40	9.2	...	...	...	...	...	6	1.3	The solid chalk was reached within a foot of the top. In this ditch no pottery was found	Man, the right ulna
				

SUPPLEMENTARY RELIC TABLE, MOUNT CABURN, JULY 1878.

No.	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS.		
				Coarse, with large grains, soft, hand-made British.		Medium quality, with small grains, grain hard, mostly light-coloured.		Smooth, soft, without grains, chiefly hard or black, lathe-turned.		Finest quality of unglazed, chiefly grey, lathe-turned.		Samian.				Ornamental.	
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.			No.	Per-centage.
1	Pit 12	July 5th, 1878	To north-east of large pit. An irregular circle. Top measure, 5 feet 2 inches by 3 feet 11 inches; bottom, 3 feet 9 inches by 3 feet 3 inches; depth, 4 feet. Surface-mould, 1 foot 10 inches. Long-diameter, S. 35° E.	...	...	6	42.8	7	50.0	...	...	...	1	7.0	Clay spindle-whorl at 2 feet 9 inches. (Fig. 53.) Hole enlarged at both ends. Cylindrical terra-cotta spindle-whorl (fig. 50), found in filling in. An iron clinker and a piece of clay and lime daubing of wattlework. Rubble, mixed, chalk and mould	Helix aspersa and Helix nemoralis, the latter in considerable numbers. Bos. Sus (shortlegged variety) Ovis
2	Pit 13	July 5th, 1878	To east of Pit 12. A double pit. Top measure, 7 feet 4 inches by 3 feet 5 inches; bottom, two circles 2 feet 9 inches and 3 feet with a ridge, and 1 foot 2 inches broad and 1 foot 3 inches high, between; depth, 2 feet 10 inches. Surface-mould, 1 foot 10 inches. Long-diameter, E. and W.	...	...	9	42.8	11	52.4	...	...	...	1	4.7	Piece of ornamented pottery with bands and chevrons below, pointing to right, of medium quality, at top. Iron spearhead with socket, leaf-shaped (fig. 2), at 1 foot 8 inches from surface. Long shore pebble, perhaps a hammer, at 2 feet 5 inches. Bottom covered with wood or charcoal and a quantity of burnt flints	A layer of Helix nemoralis just beneath turf. Calf. Sheep Helix nemoralis and aspersa
3	Pit 14	July 5th, 1878	To south of Pit 13. Ob-long, with rounded corners. Measure at top, 6 feet by 4 feet 10 inches; bottom, 4 feet 7 inches by 3 feet 2 inches; depth, 4 feet 9 inches, including 1 foot 10 inches of surface-mould. Long axis, S. 35° W.	52	30.6	70	27.7	129	50.9	...	...	...	1	0.4	Round flint bruised all round, as top in surface-mould, also a fragment of ornamented pottery with bands and a herring-bone pattern (fig. 45). Two more bruised flints and a flint-flake in same place. Nine pieces of clay and lime daubing of wattlework, similar to those found in outer rampart. At 3 feet a clay spindle-whorl with a hole bored uniformly all through at 3 feet (figs. 46 and 45), and another bruised flint at bottom. Half of stone spindle-whorl composed of a shore pebble at bottom (fig. 22)	Calf and adult Bos
4	Pit 15	July 5th, 1878	To the east of Pit 13. Circular. Diameter at top, 4 feet 5 inches; at bottom, 3 feet 8 inches; depth, 4 feet 3 inches, including 1 foot 7 inches of surface-mould	...	...	...	...	...	...	...	...	...	...	...	Rubble, less mixed than Nos. 12, 13, and 14, and not a single fragment of pottery. Only a few bones	Bos. Ovis. Helix nemoralis

Supplementary Relic Table, Mount Caburn, July 1878—continued.

POTTERY.																	
No.	LOCALITY.	DATE.	DESCRIPTION.	Coarse, with large grains, soft, made British.		Medium quality, with small grains, hard, mostly light-coloured.		Smooth, soft, without grains, chiefly brown or black, lathe-turned.		Finest quality of unglazed, chiefly grey, lathe-turned.		Samian.		Ornamental.		OTHER RELICS.	ANIMAL REMAINS.
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.		
5	Pit 16	July 6th, 1878	To south of Pit 14. A double pit. Top measure, 8 feet 6 inches by 5 feet; bottom, a half-moon on one side, 4 feet by 3 feet 7 inches, separated by a ridge, 1 foot 3 inches in width, from another. Bottom square, 2 feet 6 inches by 2 feet 7 inches; depth, 2 feet 11 inches and 2 feet 4 inches, including 1 foot 5 inches of surface-mould. Long axis, W. 5° S.	...	...	2	8.7	21	91.3	...	...	...	...	...	...	Nothing of interest discovered in this pit. Rubbles, only slightly mixed, chiefly chalk.	Helix nemoralis. Horn core of Bos. Head of femur of human subject. Bos. Sus. Ovis
6	Pit 17	July 6th, 1878	Circular. To east of Pit 14. Diameter at top, 4 feet 10 inches; at bottom, 3 feet 10 inches; depth, 2 feet 10 inches, including 1 foot 2 inches of surface-mould.	...	...	6	12.3	43	87.7	...	...	...	...	...	...	Nothing but a small piece of iron slag	Large sized domestic pig, horse, sheep, calf
7	Pit 18	July 6th, 1878	To east of Pit 16. An irregular oblong. Measure at top, 4 feet 2 inches by 3 feet 10 inches; at bottom, 5 feet by 3 feet 3 inches; depth, 2 feet 11 inches, including 1 foot 6 inches of surface-mould. Long axis, S. 32° W. Corners rounded.	...	...	...	...	6	100	...	...	...	...	...	...	Rubble, chiefly chalk only, slightly mixed with mould. No relics	Bos. Ovis
8	Pit 19	July 6th, 1878	To east of Pit 15. Heart shaped, largest end to north-west. Measure at top, 5 feet 3 inches by 4 feet 3 inches; at bottom, 4 feet 5 inches by 3 feet 2 inches; depth, 3 feet 9 inches, including 1 foot 6 inches of surface-mould. Long axis, W. 20° N.	...	...	9	...	11	...	...	...	...	...	1	...	Fragment of pottery ornamented with bands and lines of dots, at 2 feet (fig. 37). Two small bands of iron. Five shore pebbles	Oysters in surface-mould only at 8 inches. Helix aspersa and nemoralis. Two periwinkles, one cockle. Large sheep, dog, lamb

9	Pit 20	July 8th, 1878	About 53 feet to south of centre of large Pit. Oval. Top measure, 5 feet 8 inches by 4 feet. Bottom, 5 feet by 3 feet 9 inches; depth, 4 feet 2 inches, including 1 foot 3 inches of surface-mould. Long. axis, S. 30° W.	1	1-9	2	3-6	45	85-5	2	3-8	...	...	3	5-8	Piece of stag's horn with all the branches cut off with metal instrument at 1 foot. Small piece of curved iron at same depth. Two pieces of pottery ornamented with curved grooves and dot and circle pattern at 2 feet 5 inches. Another at 3 feet 4 inches. Blade of iron knife (fig. 15) found in filling in. Two large stag antlers with their tines cut off, at 2 feet 11 inches on east side. All the pottery of the finest quality was found at top	Sheep and goat both. Bos. Sus. Linpet lis
10	Pit 21	July 8th, 1878	About 30 feet to south of Pit 20. Oblong; sides curved. Measure at top, 8 feet 3 inches by 3 feet 10 inches; at bottom, 7 feet 8 inches by 3 feet 3 inches. North end deeper than the other, with a step in the middle; depth, 3 feet and 2 feet 7 inches, including 1 foot 3 inches of surface-mould. Long. axis, S. 23° W.	4	7-6	...	...	29	55-1	20	38-0	...	...	...	...	All the pottery of the finest quality, the same as in Pit 20, was found at the top in surface-mould. A modern iron holdfast just under turf. Band of iron with holes at 1 foot in surface mould. A piece of the bottom of a vase of smooth pottery at 2 feet 8 inches. A piece of a glass bottle with measured lines and the figure 4 oz. It was found in filling in, must have been from the top	Oysters at 1 foot in surface-mould, and at 1 foot 7 inches also in surface-rubble. Very large-horned sheep. Sus. Bos. Cockle
11	Pit 22	July 8th, 1878	To south-west of Pit 20. Oblong. Top measure, 5 feet 4 inches by 3 feet 3 inches; bottom, 4 feet 3 inches by 2 feet 10 inches; depth, 3 feet, including 1 foot 2 inches of surface-mould. Long. axis, W. 25° S.	...	...	3	5-1	51	86-7	1	1-7	...	...	4	6-8	Two flint-flakes, at 2 feet. A small flat round piece of iron, at 2 feet 3 inches. An iron staple, at 2 feet 6 inches. Iron loop, perhaps for a belt or a bolt (fig. 9), 3 inches long, at 3 feet. A British tin coin, at 3 feet at south-west end. Fragment of thin flat iron 2 inches across, at 3 feet. Pottery ornamented with lines of dots, at 3 feet. Iron objects curved, with a loop at one end (fig. 17), similar to one found in Cissbury, 8 inches in length, at 3 feet on north-east end. A piece of rim of pottery ornamented with a raised pattern and the impress of the finger, at 3 feet (fig. 33.) A blue glass bead, at 2 feet 6 inches, at south-east corner (fig. 49)	Bos. Ovis. Helix nemoralis. Linpet
12	Pit 23	July 8th, 1878	Close to south-west of Pit 22, with an interval of only 2 feet between. Oblong. Top measure, 5 feet 5 inches by 3 feet 9 inches; bottom, 4 feet 8 inches by 3 feet 2 inches; depth, 3 feet 5	1	3-8	1	3-8	20	76-0	...	...	...	...	4	15-2	Piece of tine of stag's antler cut at both ends, at 2 feet (fig. 23). Fragment of pottery ornamented with lines of dots at bottom. British tin coin (fig. 63), found in filling in, must have been low down as it was found in black earth mixed with chalk	Bos. Ovis. Sus. Helix aspersa. Oysters at 1 foot in surface-rubble only, and another at 1 foot 6 inches just below surface-mould

Supplementary Relic Table, Mount Caburn, July 1878—continued.

No.	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS.		
				Coarse, with large grains, soft, hand-made British.		Medium quality, with small grains, hard, mostly light-coloured.		Smooth, soft, without grains, chiefly brown or black, lathe-turned.		Finest quality, of unglazed, chiefly grey, lathe-turned.		Samian.				Ornamental.	
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.			No.	Per-centage.
	Pit 23 (continued)		inches including 1 foot of surface-mould. Long. axis, W. 25° N.	...	...	...	...	...	...	...	...	...	...	...	These tin coins are the same as represented in Plate II of Mr. Evans's work on British coins.	
13	Pit 24	July 8th, 1878	One of a cluster of three, 56 feet to south-east of centre of large pit. Oblong. Top measure, 4 feet 7 inches by 3 feet 6 inches; bottom, 3 feet 10 inches by 2 feet 8 inches; depth, 5 feet, including 1 foot 4 inches of surface-mould. Long. axis, W. 35° S.	1	1.3	6	8.1	67	90.4	No other relics of consequence. Filled chiefly with rubble, and most of the pottery was in the surface-mould.	Small ox Lamb. Sus
14	Pit 25	July 8th, 1878	One of a cluster of three, close to south of Pit 24. Oblong. Top measurement 5 feet 2 inches by 3 feet 10 inches; bottom, 4 feet 8 inches by 3 feet 4 inches; depth, 5 feet 2 inches, including 1 foot 3 inches of surface-mould. Long. axis, N. 40° W.	5	17.2	...	...	24	82.5	...	...	...	...	...	Nothing of interest recorded	Bos, Sus, Helix memorials
15	Pit 26	July 8th, 1878	One of a cluster of three, close to east of Pit 24. Oblong. Top measurement 4 feet 10 inches by 2 feet 11 inches; bottom, 3 feet 3 inches by 2 feet 10 inches; depth, 4 feet 10 inches, including 1 foot 3 inches of surface-mould. Long. axis, S. 28° W.	27	31.8	55	64.9	...	...	...	...	...	3	3.5	A terra-cotta spindle-whorl, found in filling in (fig. 52)	Equus, Bos, Sus
16	Pit 27	July 8th, 1878	To south of Pit 20. Oblong. Top measurement, 5 feet 3 inches by 4 feet 2 inches; bottom, 4 feet 8 inches by 3 feet 4	...	...	3	5.4	51	92.3	...	...	...	1	1.8	A human lower jaw found in south-west corner, 2 feet 8 inches below surface, no teeth. Two fragments of rim of a vessel, fitted on to a piece of the same rim found in	Human jaw, Two foxes. Canis vulpes, Horse, Sus, Goat, Horned sheep, Bos

17	Pit 28	July 8th, 1878	inches; depth, 3 feet 10 inches, including 1 foot 4 inches of surface-mould. Long. axis, W. 35° S.	...	...	3	13.6	19	86.2	...	...	...	...	...	Pit. 28. Fragment of pottery ornamented with grooves, and dots, and circles, similar to that found in Pit 29, at bottom. Piece of bent iron at bottom.	Bos. Ovis. Sus.
18	Pit 29	July 9th, 1878	To south of Pit 27. Oval. Top measurement, 4 feet 10 inches by 3 feet 7 inches; bottom, 3 feet 7 inches by 5 feet; depth, 3 feet 1 inch, including 1 foot 2 inches of surface-mould. Long. axis, W. 25° S.	...	...	1	11.1	8	88.8	...	...	...	...	...	British tin coin (fig. 62), similar to that found in Pit 23, at 1 foot 3 inches at bottom of surface-mould, with two bears' heads, and a piece of stag horn with the tines cut off. Filled with mixed rubble.	Bos. Sus. Ovis. Helix nemoralis
19	Pit 30	July 9th, 1878	A large square pit to the south of Pit 29. Top measure, 5 feet 8 inches by 5 feet 2 inches; bottom, 4 feet 7 inches by 4 feet; depth, 2 feet 10 inches, including 1 foot 1 inch of surface-mould. Long. axis, N. and S.	...	...	3	13.6	16	72.6	3	13.6	...	...	...	Three fragments of hard grey pottery, found in the body of this pit, mixed with other fragments of the ordinary quality.	
20	Pit 31	July 9th, 1878	17 feet to south of Pit 25. A very small oval pit. Top measure, 3 feet 8 inches by 2 feet 10 inches; bottom, 2 feet 6 inches by 1 foot 10 inches; depth, 2 feet 5 inches including 1 foot 5 inches of surface-mould. Long. axis, S. 10° E.	...	...	...	...	3	100	...	...	...	...	...	Iron leaf-shaped spearhead with socket (fig. 3), total length 4 inches, found 1 foot 9 inches in centre of pit, just beneath surface-mould.	Bos, small in size
21	Pit 32	July 9th, 1878	To south of Pit 31. Oval. Top measure, 5 feet 4 inches by 4 feet 3 inches; bottom, 4 feet 8 inches by 3 feet 4 inches; depth, 3 feet 6 inches including 1 foot 8 inches of surface-mould. Long. axis, S. 5° W.	5	16.5	4	13.2	23	75.9	...	...	...	1	3.3	Small piece of ornamented pottery with a dot and two lines, at bottom of surface rubble a piece of clay, perhaps the darning of wattlework.	Sus. Bos. Sheep or goat. Bird, bones of raven

Supplementary Relic Table, Mount Caburn, July 1878—continued.

No.	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS.		
				Coarse, with large grains, soft, hand-made British.		Medium quality, with small grains, hard, mostly light-coloured.		Smooth, soft, without grains, chiefly brown or black, lathe-turned.		Finest quality, of unglazed, chiefly grey, lathe-turned.		Samian.				Ornamental.	
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.			No.	Per-centage.
22	Pit 33	July 9th, 1878	21 feet to east of Pit 26. Oval. Top measure, 4 feet 3 inches by 3 feet 8 inches; bottom, 2 feet 10 inches by 2 feet 8 inches; depth, 3 feet, including 1 foot 4 inches of surface-mould. Long axis, E. and W.	1	66	27	17.8	121	79.8	...	...	...	...	1	66	A large fragment of pottery 4 inches across, ornamented with curved grooves, and three dots and circles (fig. 36), similar to that found in Pits 20 and 27, eight shore pebbles	Helix nemoralis
23	Pit 34	July 9th, 1878	To south of 32. A round oval; top measure, 6 feet by 5 feet 5 inches; bottom, 4 feet 9 inches by 4 feet 7 inches; depth, 4 feet 9 inches, including 1 foot 8 inches of surface-mould. Long axis, E. and W.	No Pottery recorded.												Stag's horn with the branches cut short off, and another on floor of pit with the tines cut off. A fragment of glazed pottery ribbed, found in filling in. The only pieces found in Caburn. Must have been in surface-mould	Helix nemoralis and limpet
24	Pit 35	July 9th, 1878	To east of 32. A large oblong pit. Top measure, 7 feet 9 inches by 4 feet 1 inch; bottom, 6 feet 2 inches by 3 feet 5 inches; depth, 3 feet 11 inches, including 1 foot 6 inches of surface-mould. Long axis, W. 20° S.	5	8.4	28	47.3	23	38.8	1	1.69	1	1.69	1	1.69	Very small fragments of Samian, found 1 foot 9 inches deep, just below surface-mould. Tine of deerhorn, cut and perforated (fig. 24), on bottom of pit in centre. Iron curved object similar to that found in Pit 22, but only 4 inches across (fig. 16) at bottom, with a small piece of flat iron close to it. A bone comb with eight teeth exactly similar to that found in Pit 1 (fig. 12), at bottom in the south-east corner. Piece of pottery ornamented with a curved band and two transverse bands, at 6 inches above floor of pit. Boar's tusk, at bottom. A well-formed iron knife-blade found in filling in (fig. 7), and a piece of pottery with loop for a cord, the only piece found in Caburn	Sheep (large breed). Bos. Sus. Helix aspersa and nemoralis. Common fowl, duck, curlew

25	Pit 36	July 9th, 1878	To west of 34. A double pit, one beside the other, both oval; apparently one pit had been filled up and another subsequently formed, which cut into it as the axis of the two were not parallel. Top measure of the two pits, 5 feet 5 inches, and 4 feet 5 inches by 5 feet 5 inches across; bottom, 3 feet 9 inches long, 1 foot 11 inches and 2 feet 7 inches across; depth, 2 feet 4 inches, including 10 inches of surface-mould. Long axis, S. 45° W. and S. 35° W. The northern pit was 3 inches deeper than the other	...	...	...	...	...	60	95.4	...	3	4.7	All the pottery was at top in surface-mould	Sus. Ovis. Goat	Box
26	Pit 37	July 9th, 1878	To west of Pit 21. Oblong. Top measure, 5 feet by 4 feet 4 inches; bottom, 4 feet 6 inches by 3 feet 3 inches, 2 feet 7 inches deep including 1 foot 2 inches of surface-mould. Long axis, W. 5° N.	...	...	...	...	40	100	...	...	...	...	Two British tin coins (fig. 61), found at bottom, see Plate H of Mr. Evans' work on British coins. A small iron knife and a piece of tine of deerhorn, cut and perforated as if for a handle of some kind. An iron sickle (fig. 10), similar to one found in Cishary. Several shore pebbles. Filled with black mould	Goat.	Box
27	Pit 38	July 10th, 1878	To west of Pit 36. Rhomboidal, irregular. Top measure, 6 feet by 4 feet 6 inches; bottom, 5 feet 2 inches by 4 feet. 4 feet deep, including 1 foot 9 inches of surface-mould	4	3.9	18	17.8	78	77.1	...	...	2	1.9	Lumps of iron pyrites		Three oyster-shells at top only. Horse-jaw split as if for marrow. Helix memorials
28	Pit 32	July 10th, 1878	To west of Pit 37. Oblong. Top measure, 5 feet 3 inches by 4 feet 6 inches; bottom, 4 feet 2 inches by 2 feet 10 inches; 4 feet 2 inches deep, including 1 foot 4 inches of surface-mould. Long axis, W. 28° N.	1	2	9	18	39	78	1	2	...	...	Piece of Roman tile in surface mould the second piece found in Caburn. An iron knob with a curved projection near top. A piece of an iron ploughshare at bottom (fig. 4). Shore pebbles		
				9	28.8	...	...	22	70.9	...	...	...	...

Supplementary Relic Table, Mount Caburn, July 1878—continued.

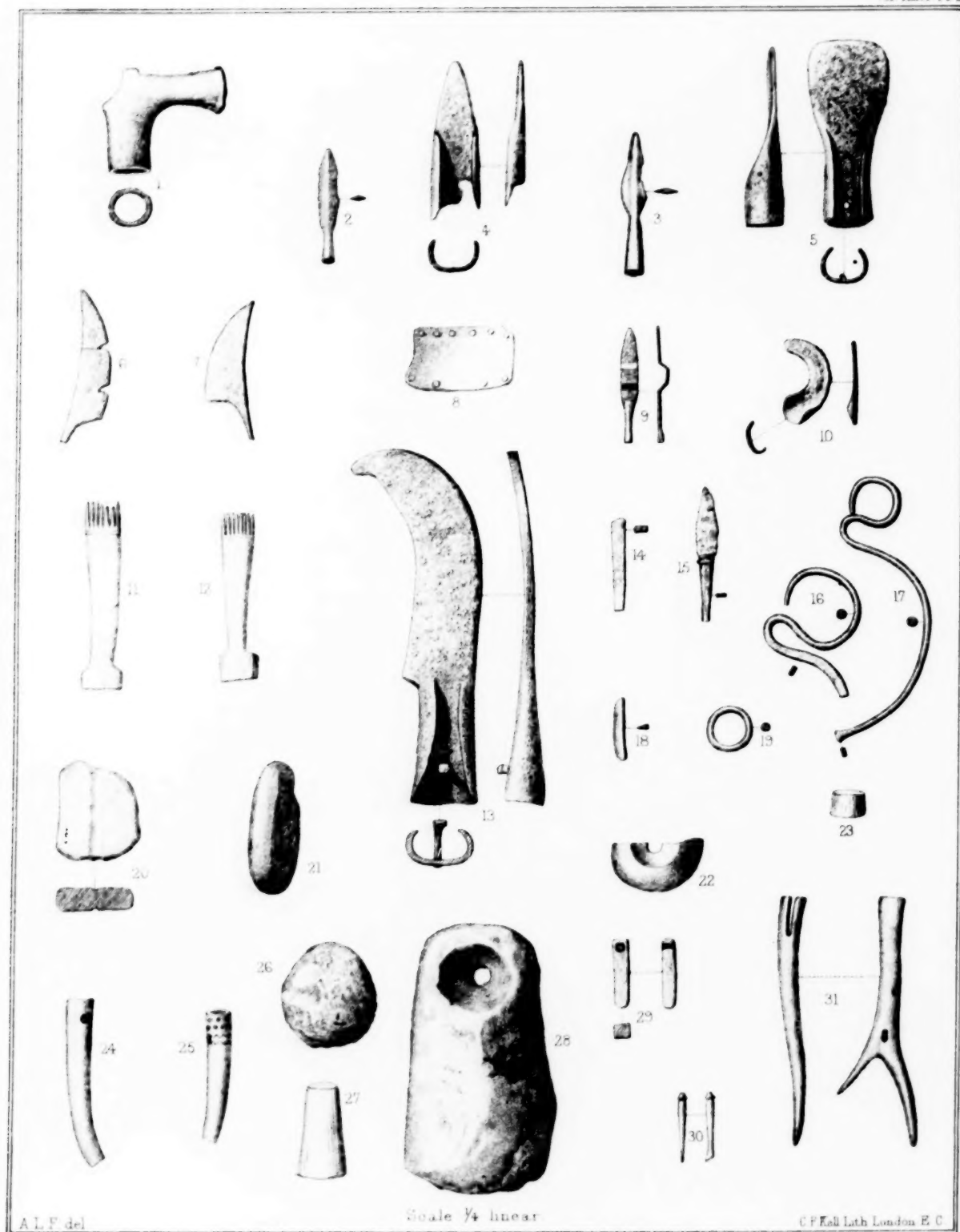
No.	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS.		
				Coarse, with large grains, soft, hand-made British.		Medium quality, with small grains, hard, mostly light-coloured.		Smooth, soft, without grains, chiefly brown or black, lathe-turned.		Finest quality of unglazed, chiefly grey, lathe-turned.		Samian.				Ornamental.	
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.				No.	Per-centage.
29	Pit 40	July 10th. 1878	To south of Pit 39. Oblong. Top measure, 6 feet by 4 feet 5 inches; bottom, 3 feet 9 inches by 3 feet 6 inches; 5 feet 7 inches deep, including 1 foot 9 inches of surface-mould. Long, axis, W. 18° N.	1	2.98	32	94.3	1	2.98	A small stone weight or whetstone of red sandstone, squared, and perforated at top, with a hole enlarging at both ends, 2 inches long, at 4 feet (fig. 29). A shore pebble apparently used as a bur-nisher, at 4 feet 6 inches. 7 chalk weights, 7 inches long, perforated at the small end by a hole enlarged at both ends, similar to others found in pits in Cissbury. A tine of stag's horn cut at both ends (fig. 27), 24 inches long, and a piece of pottery ornamented with curved grooves and a curved line of dots (fig. 35), similar in character to those found in other pits, at 5 feet. This pit was filled with black mould	Equus caballus. Bos longifrons. Ovis (young and old). Sus scrofa var. dom. Mytilus edulis. Charred sheep bone
			Top	...	...	4	5.8	64	94.2	...	...	...	...	...

RELIC TABLE, RANSCOMBE CAMP, JULY 1878.

No.	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS.		
				Coarse, with large grains, soft, hand-made British.		Medium quality, with small grains, hard, mostly light-coloured.		Smooth, soft, small grains, chiefly brown or black, lathe-turned.		Finest quality of unglazed, chiefly grey, lathe-turned.		Samian.				Ornamental.	
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.			No.	Per-centage.
1	Interior slope of section	July 11th, 1878	Section 8 feet wide through rampart, part occupied by the silting of the rampart at the foot of the interior slope. Section extended to about 1 foot 4 inches below surface	...	...	...	...	20	87.0	...	...	3	13.0	...	...	Samian pottery just under the turf, within 10 inches of the surface. Twelve flint-flakes at same spot and three iron nails	
2	Trenches along foot of interior slope	July 11th and 12th, 1878	A trench about 4 feet wide along foot of interior slope, where the pottery was found in the section, extending to 72 feet towards the south of the section. All the pottery was found just under the turf. The pottery died out at 72 feet, and no more was found to the south of that	...	...	...	...	462	87.7	26	4.9	18	3.4	11	2.1	Some of the pottery had a raised rim with the impression of twisted thongs on it, others had parallel grooves, none had curved lines or herring-bone, or any of the patterns found in Caern. Several rims of Samian were found and a piece of iron bar	
3	Body of rampart	July 11th and 12th, 1878	Section 8 feet wide, dug down to old surface-line all through	3	100	...	...	...	...	...	...	...	...	...	...	One fragment of British pottery, 2 feet to the front of the foot of interior slope on old surface-line. Another in the same position, 2 feet 7 inches behind crest, and a third beyond the crest, no other pottery. A stag's horn beneath crest. A few flint-flakes	Horn of stag, tooth of Bos, and Helix nemoralis
4	Upper stratum of ditch	July 11th, 1878	Section 8 feet wide, upper stratum extending to 1 foot below surface	...	...	...	...	46	92.0	...	...	...	...	4	8.0	Bar of iron with hole and an iron staple. Eleven flint chips	Oysters. Helix aspersa. Bos. Ovis
5	Second stratum of ditch	July 11th, 1878	Extending from 1 foot to 1 foot 8 inches all over section	...	...	...	...	8	100	...	...	...	...	...	...	A piece of Roman tile with two grooves on it. Twenty-seven flint flakes	An oyster shell, Helix aspersa. Call. Ovis

Relic Table, Ranscombe Camp, July 1878—*continued.*

No.	LOCALITY.	DATE.	DESCRIPTION.	POTTERY.										OTHER RELICS.	ANIMAL REMAINS.		
				Coarse, with large grains, soft, hand-made British.		Medium quality, with small grains, hard, mostly light-coloured.		Smooth, soft, without grains, chiefly brown or black, lathe-turned.		Finest quality of unglazed, chiefly grey, lathe turned.		Samian.				Ornamental.	
				No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.	No.	Per-centage.			No.	Per-centage.
6	Third stratum of ditch	July 12th, 1878.	Extending from 1 foot 8 inches to bottom of ditch all over section. Sides of ditch irregular. A hard crust of consolidated chalk rubble, formed probably by treading during wet weather, at top of third stratum, 7 inches to 1 foot thick, below which soft rubble. Bottom of ditch, 3 feet 9 inches below surface	4	100	No other pottery than British below the hard crust. A large quantity of flint chips with the animal remains	Numerous jaws of young calves		



ANTIQUITIES FROM MOUNT CABURN, SUSSEX.

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DESCRIPTION OF PLATES.

Plate XXIV.

Fig. 1. Iron hammer, probably part of an adze, length of socket $2\frac{3}{4}$ inches, interior diameter of socket 9 inches; found 2 feet 8 inches beneath the surface in Pit 7, Oct. 11th, 1877.

Fig. 2. Iron spear or javelin head, $3\frac{1}{4}$ inches long, including socket; found 1 foot 8 inches beneath the surface in Pit 13, July 5th, 1878.

Fig. 3. Iron spear or javelin head, $4\frac{1}{4}$ inches long, including socket; found 1 foot 9 inches beneath the surface in Pit 31, July 9th, 1878.

Fig. 4. Iron object, possibly a small ploughshare, $4\frac{1}{2}$ inches long, socket $1\frac{1}{4}$ inch in diameter; found at the bottom of Pit 39, July 10th, 1878.

Fig. 5. Iron spud, $5\frac{1}{2}$ inches long, socket 1.1 inch in diameter; found 2 inches beneath the surface in Pit 2, Sept. 3rd, 1877.

Fig. 6. Iron curved knife, originally about 5 inches long including tang, $1\frac{1}{4}$ inch greatest width of blade, $\frac{1}{8}$ inch greatest thickness at back; found at the bottom of the twin-pit, Sept. 6th, 1877.

Fig. 7. Iron knife, 4 inches long including tang, 1.3 inch greatest width of blade, $\frac{1}{4}$ inch thick at back; found in filling in Pit 35, July 9th, 1878.

Fig. 8. Iron scale of armour, or fragment of cheek-piece of helmet, or perhaps the patching of an iron pot, with marks of seven iron studs and three bronze ones; slightly concave on one face, and convex on the other, $3\frac{1}{4}$ inches by 1.9 inch and 0.1 inch thick; found at the bottom of Pit 1, Sept. 3rd, 1877, with the bone comb, fig. 11, and fig. 57.

Fig. 9. Iron object, possibly the loop of a scabbard for the passage of the sword-belt, or perhaps part of a door-bolt, 3.3 inches long and $\frac{1}{2}$ inch wide; found 3 feet beneath the surface in Pit 22, July 8th, 1878.

Fig. 10. Iron sickle with the edge on the concave side, greatest length $2\frac{1}{2}$ inches, width of blade 0.6 inch; found at the bottom of Pit 37 with two British tin coins, one of which is represented in fig. 61, July 9th, 1878.

Fig. 11. Comb of deer horn, for weaving or combing flax, 5.6 inches long, with seven teeth; found at the bottom of Pit 1, with the fragments of pottery represented in fig. 57, and the iron scale represented in fig. 8, Sept. 3rd, 1877.

Fig. 12. Comb of deerhorn for weaving or combing flax, 5 inches long, with 8 teeth; found at the bottom of Pit 35, near the piece of pottery represented in fig. 38, and the curved iron object represented in fig. 16, and in the same pit with figs. 7 and 42.

Fig. 13. Iron bill, $10\frac{1}{4}$ inches long, breadth of blade 2 inches, interior diameter of socket $1\frac{3}{4}$ inch; found at the bottom of Pit 3, with the deerhorn knife-handle fig. 25, the bar of iron (fig. 14), and a fragment of an earthenware globular vessel, Sept. 4th, 1877.

Fig. 14. Iron bar, 2·6 inches in length, $\frac{1}{4}$ inch by 0·4 inch in thickness, perhaps prepared to make into a knife or tool of some kind and used as a medium of exchange; weight 1 oz. and 146 grains; found at the bottom of Pit 3, with figs. 13 and 25, Sept. 4th, 1877.

Fig. 15. Iron knife, $3\frac{3}{4}$ inches in length, including the tang of 2 inches; found in filling in Pit 20, July 8th, 1878.

Fig. 16. Curved iron object, greatest length $3\frac{3}{4}$ inches, diameter of bar $\frac{1}{4}$ inch, flat at the end opposite the loop; found at the bottom of Pit 35, with the bone comb fig. 12, and the fragment of pottery fig. 38, and in the same pit with figs. 7, 24, and 42, July 9th, 1878.

Fig. 17. Curved iron object similar to the last, greatest length 8 inches, flat at the end opposite to the loop; found 3 feet beneath the surface in Pit 22, close to the fragment of pottery represented in fig. 33, the blue glass bead fig. 49, and in the same pit with fig. 9, July 8th, 1878.

Fig. 18. Fragment of bronze, probably a piece of the edge of a sword or spear-head, $1\frac{1}{4}$ inch in length, $\frac{1}{2}$ inch in width, and $\frac{1}{6}$ inch thick at back, where it has been broken off; found at the bottom of Pit 9, with the bronze armour ring fig. 19, and the small globular vessel fig. 34, and in the same pit with the horn handle fig. 31, Oct. 12th, 1877.

Fig. 19. Bronze armour ring, circular in section, exterior diameter $1\frac{1}{4}$ inch; found in Pit 9 with the last, Oct. 12th, 1877.

Fig. 20. Shore pebble $2\frac{3}{4}$ by $2\frac{1}{4}$ inches and $\frac{3}{4}$ inch thick, weight 6 oz., with a shallow groove on both sides and the top, and marks of hammering at the three prominent corners, flat on the under side; found 5 feet 4 inches beneath the surface in Pit 2, Sept. 4th, 1877.

Fig. 21. Shore pebble 4 inches long and 1 inch thick, weight 9 oz., worn along the edge by friction; found at 5 feet 4 inches beneath the surface in Pit 1, with the bone comb fig. 11, the iron scale fig. 8, and the fragment of pottery fig. 57, Sept. 3rd, 1877.

Fig. 22. Fragment of a stone spindle-whorl, composed apparently of a flattish shore pebble, bored in the centre with a hole $\frac{1}{2}$ inch in diameter in the middle, and enlarging to 1 inch on both sides; found in filling in Pit 14, July 5th, 1878.

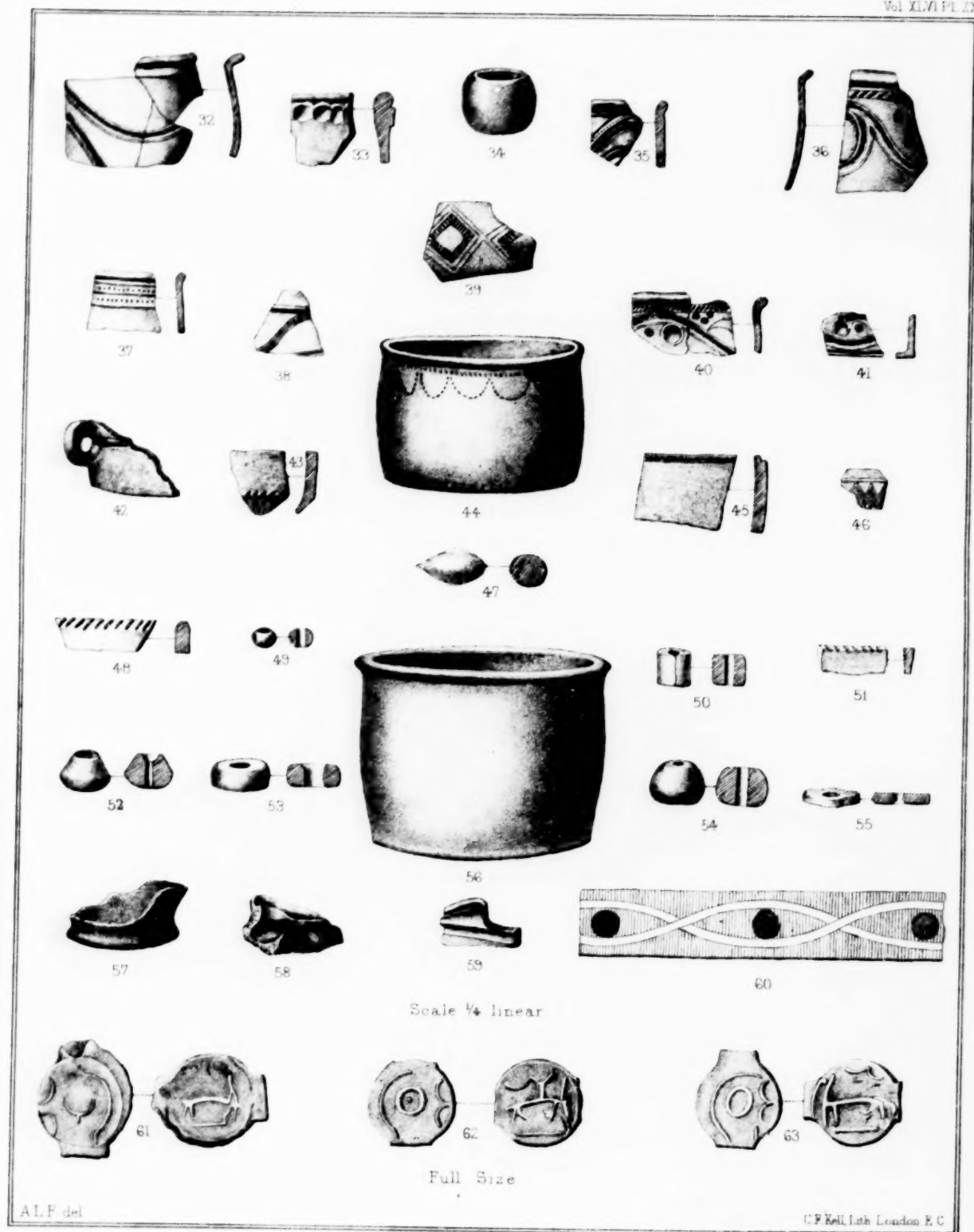
Fig. 23. Fragment of deerhorn cut at both ends, 1 inch thick; found in Pit 23, July 8th, 1878.

Fig. 24. Tine of deerhorn $4\frac{1}{2}$ inches in length, cut at both ends and pierced at $\frac{3}{4}$ inch from the big end by a cylindrical hole $\frac{1}{4}$ inch in diameter, perhaps a pendant ornament; found at the bottom of Pit 35, with the horn comb fig. 12, the piece of pottery fig. 38, the iron knife fig. 7, and the curved iron object fig. 16, July 9th, 1878.

Fig. 25. Tine of deerhorn, cut at one end and broken at the small end, perhaps a knife-handle, pierced at the big end as if to receive a blade by a hole $\frac{1}{2}$ inch in diameter and 1 inch deep, ornamented with a dot and circle pattern, and pierced laterally at $\frac{1}{2}$ an inch from the big end by a cylindrical hole not quite $\frac{1}{4}$ inch in diameter; found at the bottom of Pit 3, with the iron bill fig. 13, and the iron bar fig. 14, Sept. 4th, 1877.

Fig. 26. Flint ball which has been used as a hammer, with marks of hammering all round, 3 inches in diameter, weight 18 oz.; found in the body of the outer rampart, Sept. 12th, 1877.

Fig. 27. Piece of deerhorn, cut flat at both ends in a similar manner to fig. 23, $2\frac{1}{2}$ inches long, cut with a metal saw; found in Pit 40, with figs. 28 and 29.



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Fig. 28. Loom weight of chalk, 8 inches in length, bored with a hole $\frac{1}{2}$ inch in diameter in the centre, enlarging at both ends, of unsymmetrical form; weight 3 lbs. 1 oz.; found with six others at the bottom of Pit 40, with figs. 27, 29, July 10th, 1878.

Fig. 29. Whetstone or burnisher of sandstone, 2 inches long and $\frac{1}{2}$ inch square, having a hole for suspension $\frac{1}{2}$ inch in diameter in the middle, enlarging to $\frac{1}{4}$ inch at both ends; weight 180 grains; found in Pit 40, with figs. 27, 28, July 10th, 1878.

Fig. 30. Bone object of unknown use, perhaps a stylus, $1\frac{1}{4}$ inch in length, shaft $\frac{1}{4}$ inch in diameter, enlarged and flattened at one end; found 2 feet 3 inches beneath the surface in Pit 7, with the iron hammer or adze fig. 1, Oct. 11th, 1877.

Fig. 31. Handle of deerhorn with branches, 7 inches long, with a slit at the big end $1\frac{1}{4}$ inch long and 0.1 inch wide, probably to contain a metal blade of some kind but without any transverse rivet-hole, perforated for suspension at the junction of the branches by an oval hole $\frac{1}{4}$ inch long and 0.1 inch wide, formed by drilling two circular holes side by side; found at the bottom of Pit 9, with figs. 18, 19, and 34, Oct. 12th, 1877.

Plate XXV.

Fig. 32. Fragment of rim of grey-brown pottery, $\frac{1}{2}$ inch thick, medium quality, intermixed with fine grains of sand, ornamented with shallow curved groove about $\frac{1}{4}$ inch in thickness, each groove is edged with a fine incised line; found in Pit 5, Sept. 5th, 1877.

Fig. 33. Fragment of rim of dark brown pottery $\frac{1}{4}$ inch thick at sides, the rim $\frac{1}{2}$ inch in thickness, having a few grains of white quartz or shell in its composition but no sand, ornamented under the rim by a band of clay dabbed on, and a row of impressions of a small finger, some of the same pottery had also lines and dots on it; found in Pit 22, with the curved iron object fig. 17, the iron loop or bolt fig. 9, and the blue glass bead fig. 49, July 8th, 1878.

Fig. 34. Small globular vessel of brown pottery 2 inches in diameter; found at the bottom of Pit 9, with figs. 18, 19, and 31.

Fig. 35. Fragment of brown pottery of superior quality, well baked, $\frac{1}{4}$ inch thick, smooth, without grain or sand, ornamented with grooves and incised lines; found in Pit 40, at 5 feet beneath the surface, with figs. 27, 28, and 29, July 10th, 1878.

Fig. 36. Fragment of brown pottery of superior quality like the last, ornamented with grooves and incised lines, and a dot and circle pattern, $\frac{1}{4}$ inch thick; found at the bottom of Pit 33, July 9th, 1878.

Fig. 37. Fragment of brown pottery of superior quality, the rim is $\frac{1}{4}$ inch thick and it increases in thickness lower down, ornamented with two rows of circular punch marks, and three incised lines beneath the rim; found in Pit 19 at 2 feet beneath the surface, July 6th, 1878.

Fig. 38. Fragment of pottery of superior quality, dark brown or black, ornamented with two raised bands and a curved band of incised lines filled with parallel incised lines; found at the bottom of Pit 35, with the iron object fig. 16, the bone comb fig. 12, the deerhorn pendant fig. 24, and the iron knife fig. 7, July 9th, 1878.

Fig. 39. Fragment of pottery of reddish brown colour, unequally coloured, $\frac{1}{4}$ to $\frac{1}{2}$ inch in

thickness, of superior quality but having grains of white quartz in its composition, ornamented by irregular squares of about $1\frac{1}{2}$ inch, sides formed by incised lines and bands filled with lines; found in the bottom of Pit 4, Sept. 5th, 1877.

Fig. 40. Fragment of greyish brown pottery, $\frac{1}{4}$ inch thick, similar in character and ornamentation to figs. 35 and 36; found in Pit 20, with the iron knife fig. 15, July 8th, 1878.

Fig. 41. Fragment of pottery, similar to figs. 35, 36, and 40; found with a human lower jaw in Pit 27, July 8th, 1878.

Fig. 42. Piece of rim of blackish brown pottery, well baked, smooth on the outside, but sandy in its composition, $\frac{1}{2}$ inch thick, with a loop for a string; the hole has an interior diameter of little more than $\frac{1}{4}$ inch, and is consequently too small for the insertion of even a single finger; the only piece of this character from Mount Caburn; found in filling in Pit 35, in the same pit as figs. 7, 12, 16, and 24, July 9th, 1878.

Fig. 43. Fragment of reddish-brown pottery of medium quality, with sand in its composition, ornamented at the shoulder with a line of triangular punch-marks; found in Pit 35, with the last-named objects, July 9th, 1878.

Fig. 44. Pot with flat bottom, of a superior quality of pottery, brown; restored by Mr. Ready, of the British Museum; it is 6 inches in diameter and 4 inches high, like a saucepan without the handle, ornamented under the rim with a row of impressed semicircular marks; found at the bottom of Pit 9, Oct. 12th, 1877.

Fig. 45. Fragment of rim of reddish pottery, of medium quality, not quite $\frac{1}{2}$ inch thick, of sandy texture but without large grains, ornamented on the rim with two parallel lines of incised marks; found in the centre of Pit 14, with figs. 22 and 54, July 5th, 1878.

Fig. 46. Fragment of black pottery of fine quality, ornamented with a raised band and a herring-bone pattern, $\frac{1}{2}$ inch thick; found in the same pit with the last, July 5th, 1878.

Fig. 47. Sling bullet of baked clay, of light buff colour, $1\frac{3}{4}$ inch long and 1 inch in diameter; weight 263 grains or little more than $\frac{1}{2}$ an oz.; it is very symmetrically formed by hand, not moulded, and it resembles the Greek and Roman sling bullet of lead, but is larger and corresponds exactly in form and size to those of stone used by the natives of New Caledonia; found at the bottom of Pit 35 with figs. 7, 12, 16, and 24, July 9th, 1878.

Fig. 48. Fragment of rim of brick-coloured pottery of medium quality, black in the inside and red outside, ornamented with a line of deep oblique incised lines on the outside of the rim, $\frac{1}{2}$ inch thick; found in the body of the outer rampart, Sept. 1877.

Fig. 49. Opaque dark blue glass bead $\frac{3}{4}$ inch in diameter, with a cylindrical hole $\frac{1}{4}$ inch in diameter, weight 67 grains; found 2 feet 6 inches beneath the surface in Pit 22, with figs. 9, 17, and 33, July 8th, 1878.

Fig. 50. Earthenware spindle-whorl of cylindrical shape, of red earthenware, 1 inch in diameter and 1 inch high, perforated by a cylindrical hole $\frac{1}{2}$ inch in diameter; found in filling in Pit 12, with fig. 53, July 5th, 1878.

Fig. 51. Fragment of rim of coarse grey pottery of the most inferior quality, with grains of quartz, ornamented on the upper edge of the rim with incised lines; found in the body of the upper rampart, being the only ornamented piece found there, July 1878.

Fig. 52. Reddish brown earthenware spindle-whorl, $1\frac{1}{2}$ inch greatest diameter, and 1·1 inch high, perforated by a cylindrical hole $\frac{1}{4}$ inch in diameter, weight 564 grains, having a cup-shaped depression at top; found in filling in Pit 26, July 1878.

Fig. 53. Drab coloured clay spindle-whorl, $1\frac{1}{4}$ inch in diameter and $\frac{3}{4}$ inch high, perforated by a hole $\frac{1}{2}$ inch in diameter in the centre and splaying to $\frac{3}{4}$ inch at both ends; weight 600 grains; found 2 feet 9 inches beneath the surface in Pit 12, with fig. 50, July 5th, 1878.

Fig. 54. Drab coloured clay spindle-shaped whorl, $1\frac{1}{2}$ inch in diameter and 1·1 inch in height perforated by a cylindrical hole $\frac{1}{4}$ inch in diameter, enlarging slightly towards the ends; weight 938 grains or nearly 2 oz.; found 3 feet beneath the surface in Pit 14, with figs. 22 and 45, July 5th, 1878.

Fig. 55. Spindle-whorl, composed of a piece of red pottery adapted to this use, irregularly formed, $\frac{1}{4}$ inch thick and about $1\frac{1}{4}$ inch in diameter, with a hole irregularly chipped $\frac{1}{4}$ to $\frac{1}{2}$ inch across; weight 257 grains; found 1 foot 11 inches beneath the surface in Pit 2, with the iron spud fig. 5, Sept. 3rd, 1877.

Fig. 56. Earthen pot, restored by Mr. Ready, of brown pottery, shaped like a saucepan without the handle, $6\frac{1}{4}$ inches in diameter at the bottom and $8\frac{1}{2}$ inches at top, $5\frac{1}{2}$ inches high, quite plain; found in Pit 3, with the iron bill fig. 13 and the iron bar fig. 14, Sept. 14th, 1877.

Fig. 57. Bottom of an earthenware vase of brown pottery, sides $\frac{1}{4}$ inch thick, bottom $3\frac{1}{4}$ inches in diameter; found at the bottom of Pit 1, with figs. 8, 11 and 21, Sept. 3rd, 1877.

Fig. 58. Fragments of the daubing of a wattle-work wall, composed of lime and clay, showing the impress of the upright stakes, the interlacing wattles, and the smooth exterior of the wall; found under the body of the outer rampart on the old surface line, Sept. 1877.

Fig. 59. Another fragment of daubing, the same as the last.

Fig. 60. Horizontal section of the wall, restored by measurement of the fragments of daubing, the upright stakes are $\frac{3}{4}$ inch thick and 4 inches apart from edge to edge, the osier wattles $\frac{1}{2}$ inch thick and the wall with the daubing 2 inches in thickness.

Fig. 61. British tin coin, on the obverse a head, possibly helmetted, the eye is represented by a circle, and the face by two crescents turned to the left; on the reverse is the figure of an animal, said to be a bull, facing to right, with a line beneath and crescents above; it has been cast with others in a string and the runlets cut through with a chisel, weight 30 grains; found in Pit 37, with the iron sickle fig. 10, July 9th, 1878. Another tin coin in the same pit weighed 20 grains.

Fig. 62. British tin coin similar to the last, with the head to the right, weight 17 grains; found 1 foot 9 inches beneath the surface in Pit 29, July 9th, 1878.

Fig. 63. British tin coin, similar to the foregoing, the animal to the left, weight 22 grains; found in filling in Pit 23, with fig. 23, July 8th, 1878. Another coin found in Pit 22 weighed 20 grains, and was found in association with figs. 9, 17, 33, and 49, but the impression is much defaced, and it is therefore not figured; the difference of weight in these coins appears to be owing chiefly to the portion of the runlet left attached to them.

ERRATUM.

Page 265, line 15, *for* gatherings *read* quarterings.

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